

Estimated Use of Water in Alabama in 2010

By: Michael J. Harper and Billy G. Turner



PUBLIC SUPPLY	
RESIDENTIAL	
IRRIGATION	
LIVESTOCK	
AQUACULTURE	
INDUSTRIAL	
MINING	
THERMOELECTRIC POWER	

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Center for Water
Resource Economics

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Foreword



Water is a vital resource both for human and natural processes. It is a key component to the overall quality of life. In order to plan and manage water for present and future generations, baseline information is needed to help policy and decision makers know where water is being used, what it is being used for, and how much is being used. This report addresses that information for 2010 in Alabama.

The 2010 report, along with the previously published 2005 report, is a result of a cooperative effort among numerous state and federal agencies and is the most comprehensive summary of water use in Alabama available. The amount of water used in each county and watershed in the state for various uses is presented in this report and is the result of countless hours of data collection and data analysis by the staff of the Alabama Office of Water Resources (OWR). The success of this report primarily depended on the support of the public water suppliers, industrial and agricultural water users, and individuals who annually participate in the OWR's Alabama Water Use Reporting Program. Thanks to their submission of valuable data, we have a much more comprehensive understanding of the link between water use and overall water availability. This 2010 report was developed by the OWR in partnership with the Troy University Center for Water Resource Economics.

We hope you find this report to be informative and useful. Although we are extremely proud of this product, we always strive toward improvement. The Alabama OWR welcomes your comments and suggestions as we make our plans to update this information in the future.

Respectfully,

A handwritten signature in blue ink, appearing to read "Jim Byard, Jr." with a stylized flourish at the end.

Jim Byard, Jr., Director
Alabama Department of Economic and Community Affairs

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Conversion Factors

Inch/Pound to SI

Multiply	By	To obtain
LENGTH		
inch (in)	2.54	centimeter (cm)
inch (in)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
AREA		
Acre	4,047	square meter (m ²)
square mile (mi ²)	259.0	hectare (ha)
square mile (mi ²)	2.590	square kilometer (km ²)
VOLUME		
gallon (gal)	3.785	liter (L)
gallon (gal)	0.003785	cubic meter (m ³)
gallon (gal)	3.785	cubic decimeter (dm ³)
million gallons (Mgal)	3,785	cubic meter (m ³)
acre-foot (acre-ft)	1,233	cubic meter (m ³)
FLOW RATE		
acre-foot per day (acre-ft/d)	0.01427	cubic meter per second (m ³ /s)
acre-foot per year (acre-ft/yr)	1,233	cubic meter per year (m ³ /yr)
gallon per day (gal/d)	0.003785	cubic meter per day (m ³ /d)
million gallons per day (MGD)	0.04381	cubic meter per second (m ³ /s)
inch per year (in/yr)	25.4	millimeter per year (mm/yr)
ENERGY		
kilowatt-hour (kWh)	3,600,000	joule (J)
APPLICATION RATE		
gallon per day per acre	0.003785	cubic meter per day per acre

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$$

Million gallons per day (MGD) may be converted to cubic feet per second (CFS) as follows:

$$\text{CFS} = \text{MGD} \times 1.5472$$

Vertical coordinate information is referenced to the North American Vertical Datum of 1988 (NAVD).

Horizontal coordinate information is referenced to North American Datum of 1983 (NAD 83).

ADDITIONAL ABBREVIATIONS USED IN THIS REPORT

ADECA	Alabama Department of Economic and Community Affairs
ADEM	Alabama Department of Environmental Management
AGI	Alabama Department of Agriculture and Industries
AL	Alabama
APCO	Alabama Power Company
ARWA	Alabama Rural Water Association
AWURP	Alabama Water Use Reporting Program
COU	Certificate of Use
CP	county population
CWS	community water system
DOE-EIA	Department of Energy, Energy Information Administration
DWB-ADEM	Drinking Water Branch-Alabama Department of Environmental Management
GA	Georgia
GIS	geographic information system
gpcd	gallons per capita per day
GPC	Georgia Power Company
GW	groundwater
HUC	hydrologic unit code
mg/l	milligrams per liter
MOR	monthly operating report
NASS	National Agricultural and Statistics Service
NAICS	North American Industry Classification System
NWUIP	National Water Use Information Program
OWR	Office of Water Resources
PWSID	Public Water System Identification
SDWIS	Safe Drinking Water Information System
SW	surface water
TVA	Tennessee Valley Authority
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USEPA	U.S. Environmental Protection Agency

Abstract

Water use in Alabama was about 9,998 million gallons per day (MGD) during 2010. Estimates of withdrawals by source indicate that total surface-water withdrawals were approximately 9,511 MGD (95 percent of the total withdrawals) and the remaining 487 MGD (5 percent) were from groundwater. More surface water than groundwater was withdrawn for all categories except aquaculture, mining, and self-supplied residential. During 2010, estimated withdrawals by category and in descending order were: thermoelectric power, 8,257 MGD; public supply, 833 MGD; self-supplied industrial, 562 MGD; irrigation, 202 MGD; aquaculture, 59 MGD; self-supplied residential, 38 MGD; livestock, 26 MGD; and mining, 21 MGD.¹ For the purpose of this report, the water use estimates provided are for water withdrawals only. During 2010, approximately 83 percent of the water used in Alabama was for thermoelectric power to generate almost 125,000 net gigawatt-hours of energy. All of the thermoelectric-power water use was from surface water; nearly all of the water (98 percent) was used for once-through cooling, and most of that water was returned to a surface-water source.

Public-supply and self-supplied residential withdrawals were approximately 9 percent of total water withdrawals and roughly 50 percent of total water withdrawals for all categories excluding thermoelectric power. Public supply groundwater withdrawals were approximately 58 percent of total groundwater withdrawals for Alabama. Public-supply deliveries to residential customers were estimated to be 40 percent of total public-supply withdrawals, or roughly 328 MGD; combined industrial and commercial deliveries were estimated to be 47 percent, or roughly 393 MGD; and public use and losses accounted for the remaining 13 percent, or approximately 111 MGD.

Self-supplied industrial (562 MGD) and mining (21 MGD) withdrawals were approximately 6 percent of total water withdrawals and about 34 percent of total water withdrawals for all categories excluding thermoelectric power. Pulp, paper, and paperboard mills accounted for the largest self-supplied industrial groundwater (12 MGD) and surface-water withdrawals (348 MGD).

Water withdrawals for the agricultural sector—irrigation (202 MGD), aquaculture (59 MGD), and livestock (27 MGD)—were approximately 3 percent of total withdrawals and roughly 16 percent of total withdrawals for all categories excluding thermoelectric power. About 169,200 acres of crops, nursery stock, sod, and golf courses were irrigated in 2010.

The largest total water withdrawals by county occurred in Limestone, Colbert, Mobile, and Jackson Counties and were 63 percent of the total; these withdrawals primarily were used to meet the cooling needs at thermoelectric-power plants. Excluding thermoelectric power, the largest withdrawals by county were in Morgan, Mobile, Jefferson, Colbert, and Madison Counties.

Water use was estimated at the hydrologic subbasin level for all categories except aquaculture, mining, and self-supplied residential. The Middle Tennessee–Elk subregion accounted for approximately 55 percent (5,476 MGD) of the estimated total withdrawals by subbasin of 9,880

¹ May not sum to total estimated use(s) or acreage because of rounding

MGD. About 92 percent of the water use in the Middle Tennessee–Elk subregion was for thermoelectric power, and more than 99 percent of the water was from surface water.

Total water withdrawals decreased slightly from 10,033 MGD in 2005 to 9,998 MGD in 2010. Surface-water withdrawals decreased from 9,532 MGD in 2005 to 9,511 MGD in 2010. Groundwater withdrawals decreased from 501 MGD in 2005 to 487 MGD in 2010. By category, increases in irrigation (30 MGD, 17 percent) and public supply (15 MGD, 2 percent) were offset by declines in aquaculture (16 MGD, 21 percent), livestock (2 MGD, 6 percent), mining (7 MGD, 25 percent), self-supplied industrial (38 MGD, 6 percent), self-supplied

residential (1 MGD, 3 percent), and thermoelectric power (17 MGD, about 0.2 percent). As compared to 2005, total withdrawals and average statewide rainfall decreased while population increased for 2010. Total average rainfall for 2010 was 47.2 inches, which was over 8 inches below the average of 55 inches, as compared to 57.1 inches received in 2005, which was 2 inches above normal.

Introduction

A continuing assessment of water availability and **water use** is needed for resource management for the State of Alabama. Population growth in many parts of the State has resulted in increased competition for available water resources. This competition includes **offstream** use for residential, agricultural, and industrial use as well as **instream** use for maintenance of habitat and species diversity, navigation, power generation, recreation, and water quality. Accurate water-use information is required for sound management decisions within this competitive framework.

Since 1950 when the U.S. Geological Survey (USGS) first conducted water-use compilations, important changes in water use have occurred in Alabama. The early part of the history (1950 to 1980) showed a steady increase in water use (MacKichan, 1951, 1957; MacKichan and Kammerer, 1961; Murray, 1968; Murray and Reeves, 1972, 1977; Peirce, 1972; Baker and others, 1982; Solley and others, 1983). During this time, the expectation was that as the population increased, so would water use. Contrary to this expectation, reported **water withdrawals** declined in 1985, remained relatively stable through 1995, and are increasing again, nearing the 1980 levels (Baker and Mooty, 1987; Solley and others, 1988, 1993, 1998; Baker and Mooty, 1993; Hutson and others, 2004a). Changes in technology, in state and federal laws, and in economic factors, along with increased awareness of the need for conservation, have resulted in more efficient use of water from the rivers, lakes, reservoirs, and groundwater in Alabama. Some differences in the water withdrawal estimates over time also can be attributed to changes in data collection and methodologies used to evaluate, calculate, and estimate water use.

Water withdrawals have more than doubled in Alabama from 1960 to 2010 from approximately 4,220 million gallons per day (MGD) to 9,998 MGD (figure 1). The entire increase in withdrawals actually occurred from 1960 to 1980 (4,220 MGD to more than 10,350 MGD), while withdrawals in subsequent years have declined somewhat, then increased slightly, but remained nearly constant from 2000 to 2010 (8,593 MGD in 1985; 8,074 MGD in 1990; 8,286 MGD in 1995; 9,990 MGD in 2000; 10,033 MGD in 2005; and 9,998 MGD in 2010). Population increased about 19 percent from 1960 to 1980 and increased another 23 percent from 1980 to 2010. As a result of the leveling off of withdrawals as population has increased, **gross per capita** use has declined. The data indicated gross per capita water use increased from approximately 1,292 gallons per day (gal/d) for 1960 to a high of 2,661 gal/d for 1980, and then decreased to roughly 2,092 gal/d for 2010. The change in gross per capita water use is mainly attributable to the fluctuation in thermoelectric-power withdrawals for the period.

More water continues to be withdrawn for thermoelectric-power generation than for any other use. Thermoelectric-power withdrawals are large, exclusively from surface water, and therefore, dominate the surface-water trends in Alabama. The dates of the operating schedules of the generating units at the power plants can be compared to the corresponding 5-year water-use data-collection cycle to explain changes in the thermoelectric-power trend. For example, Browns Ferry Nuclear Plant began operation in 1974,

closed for review of procedures in March 1985 (the average daily withdrawal was 1,165 MGD in 1985), and began generating power for one unit in July 1991 and a second unit in December 1995 (the average daily withdrawal was 776 MGD in 1995). The water withdrawal for Brown's Ferry in 2005 was 1,990 MGD. After restarting a unit in 2007, use increased to 2,724 MGD in 2010.

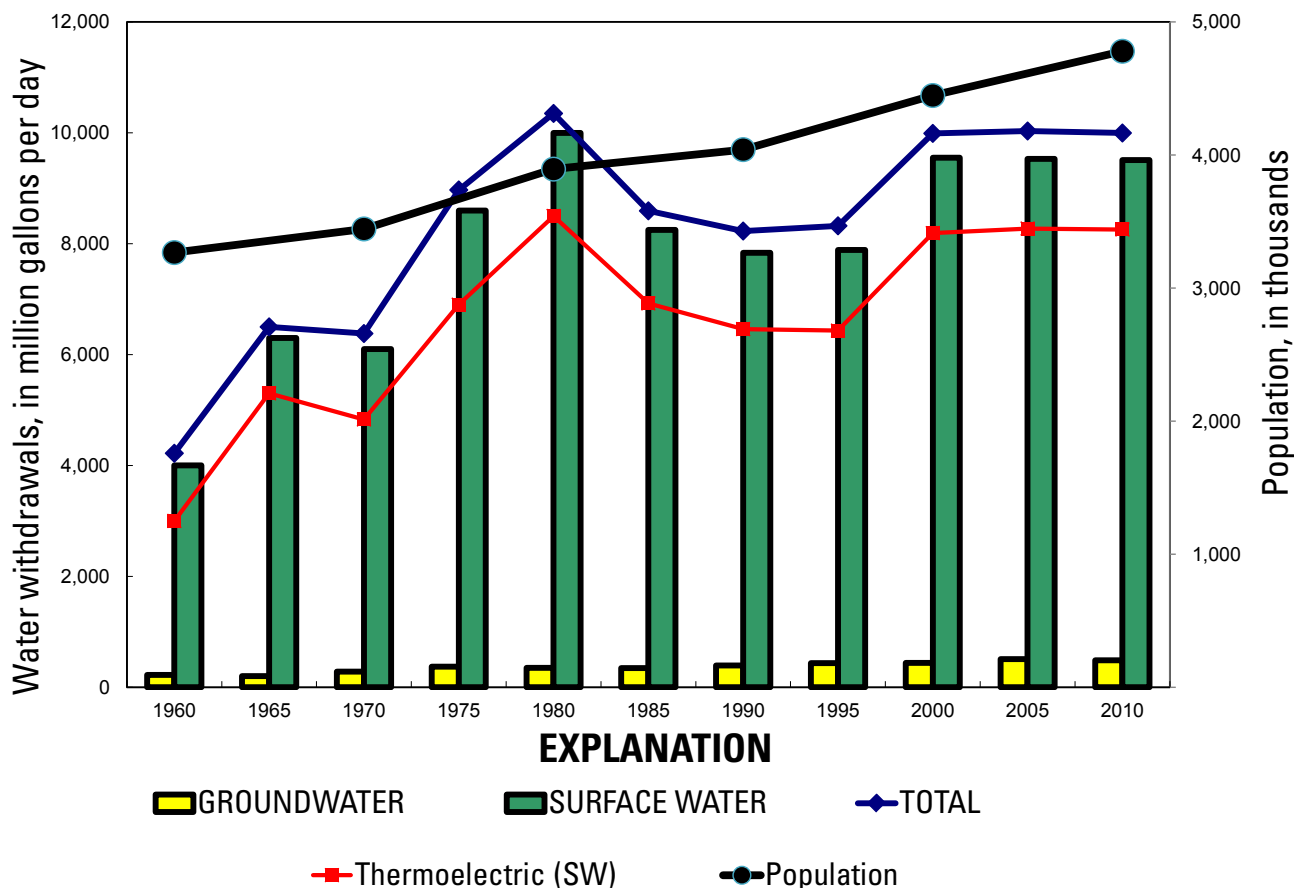
Groundwater withdrawals slowly increased from 1960 to 2005, primarily because of increased withdrawals for public supply. Groundwater withdrawals decreased slightly from 2005 to 2010. Since 1985, public-supply withdrawals have accounted for more than 50 percent of groundwater withdrawals in the State.

With passage of the Alabama Water Resources Act in 1993, the State of Alabama established the Office of Water Resources (OWR) within the Alabama Department of Economic and Community Affairs (ADECA).

Beginning in 1993, the State formalized a water-use registration, reporting, and data-collection program that has improved the accuracy and accounting of water use throughout the State. Administered by OWR, the **Alabama Water Use Reporting Program (AWURP)** has become the repository of water-use data for the State.

The AWURP provides the framework and reporting structure for the collection of baseline water withdrawal information. Specifically, the AWURP requires that all **public water systems** as well as **non-public** (commercial, industrial, mining, and thermoelectric-power facilities) and **irrigation water users** with a capacity to withdraw 100,000 gallons of water per day or greater obtain a Certificate of Use (COU). Each COU holder is required to annually report water withdrawals for average daily and peak day amounts for each month of the year. Each water-use report is signed and certified as to the accuracy of the data. The annually

Figure 1. Freshwater withdrawals in Alabama, 1960 to 2010



reported data are electronically stored in the **eWater** application.

An outreach effort has been made by OWR to increase awareness of the reporting requirements. Although established in 1993, the program provided only minimal data for the 1995 USGS water-use compilation. A more complete reporting of public, non-public, and irrigation water-use entities improved the 2000 estimate of water use for Alabama. Since 2000, AWURP data has been further supplemented by data from other governmental and nongovernmental agencies, greatly improving the comprehensiveness and accuracy of the water-use estimates.

This study of 2010 water use was conducted by the Water Management Unit of OWR in partnership with the Troy University Center for Water Resource Economics to provide water-use data for the public and local and State water managers. By examining historical and current water-use practices, more realistic projections of water needs can be made.

Purpose and Scope

This report presents water-use estimates by source of supply, water-use category, county, and hydrologic subregion and subbasin for the State of Alabama for 2010 (figs. 2 and 3). Water-use estimates for Alabama have been part of the USGS effort to document similar water-use estimates every 5 years since 1950 (MacKichan, 1951, 1957; MacKichan and Kammerer, 1961; Murray, 1968; Murray and Reeves, 1972, 1977; Solley and others, 1983, 1988, 1993, 1998; and Hutson and others, 2004). The eight water-use categories are public supply, residential, irrigation, livestock, aquaculture, industrial, mining, and thermoelectric power. The report contains a section on total water use with more detailed information for each water-use category. A comparison of water-use estimates for total, public supply, residential, irrigation, aquaculture, self-supplied industrial, and thermoelectric power from 2005 to 2010 also is presented in this report. Appendices A and B summarize water use by county and subbasin, respectively, according to source of water, water-use category, public supplier, and **North American Industry**

Classification System (NAICS) code. Appendix C lists the hydrologic region, subregion, and subbasin names and corresponding 8-digit subbasin numbers. Appendix D presents the water-system survey form. Appendix E lists the hydroelectric dams and maps their location. Instream water use in Alabama is not assessed in this report.

Hydrologic Setting

The rainfall that replenishes the rivers (figure 4) and aquifers (figure 5) in Alabama varies annually, seasonally, and geographically. Local geology, geomorphology, and topography determine the short-term and long-term groundwater and surface-water availability within a watershed. The mean annual rainfall for Alabama is 55 inches (1895 to 2013) ranging from a low of slightly less than 34 inches in 1954 to a little more than 76 inches in 1975 (National Oceanic and Atmospheric Administration, 2014).

The Tennessee and Mobile Rivers, along with numerous minor streams, provide water to Alabama residents for a variety of off-stream and instream uses (Lineback, 1973). The Tennessee River flows in a westerly direction through the Cumberland Plateau, the Highland Rim, and a small part of the East Gulf Coastal Plain (figs. 4 and 6). Total drainage area of the Tennessee River in Alabama is roughly 7,500 square miles (Alabama Department of Economic and Community Affairs, Office of Water Resources, 2002). The river is the only source of water used to supply communities such as Decatur and Sheffield and supports a robust thermoelectric power and industrial base. Wells and springs within the Cumberland Plateau and Highland Rim physiographic provinces (figs. 5 and 6) provide some limited groundwater for aquaculture, industrial, irrigation, mining, livestock, and self-supplied residential uses (Baker, 1989; Baker and Moser, 1989; Hunter, 1991; Mooty and Richardson, 1998). Most of the groundwater within the Cumberland Plateau and Highland Rim physiographic provinces is withdrawn for public supply.

The Lower Tombigbee River and its tributaries, the Upper Tombigbee and Black Warrior River, flow southward and join with

Figure 2. Subregions in Alabama by county

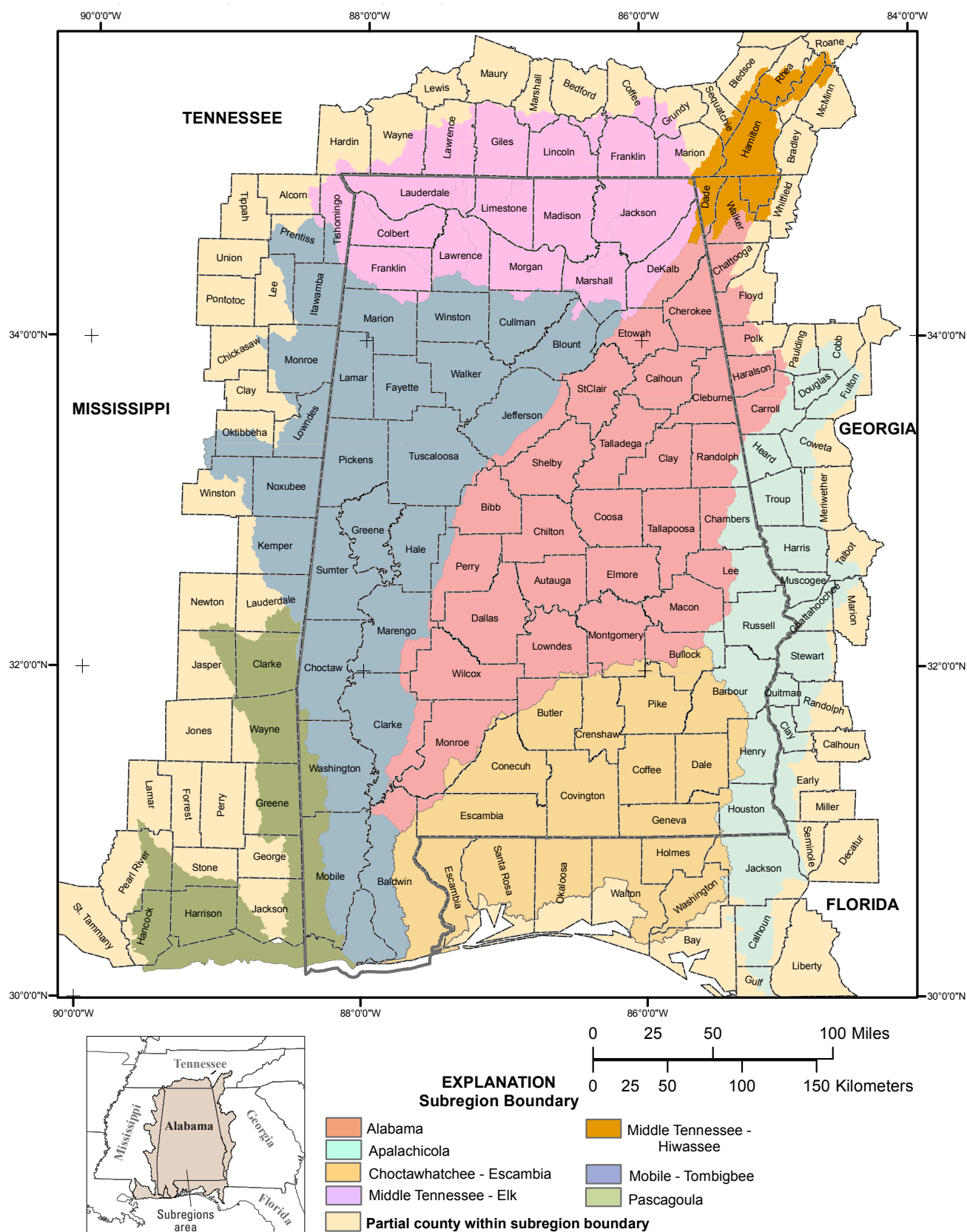


Figure 3. Subregions in Alabama by subbasin

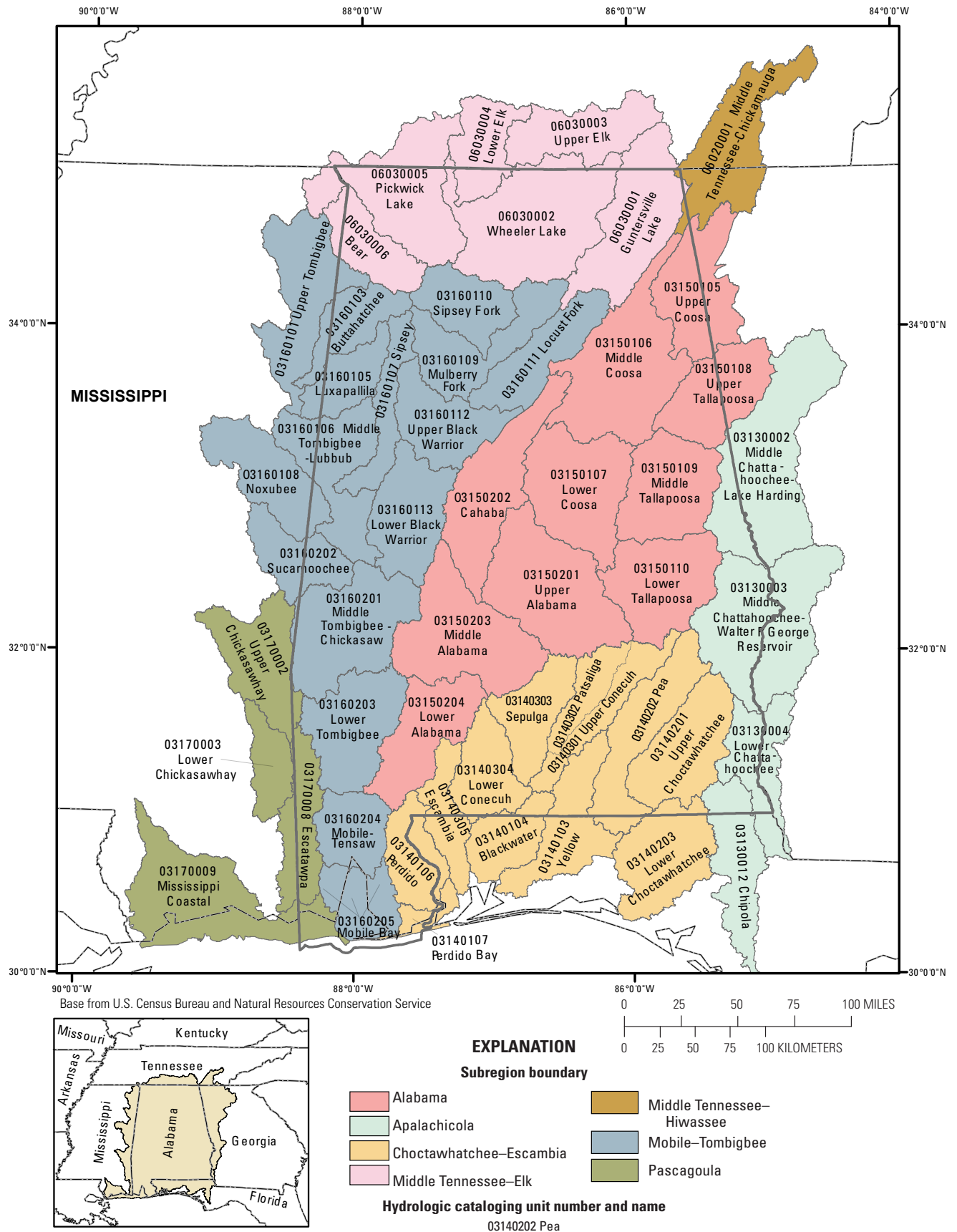


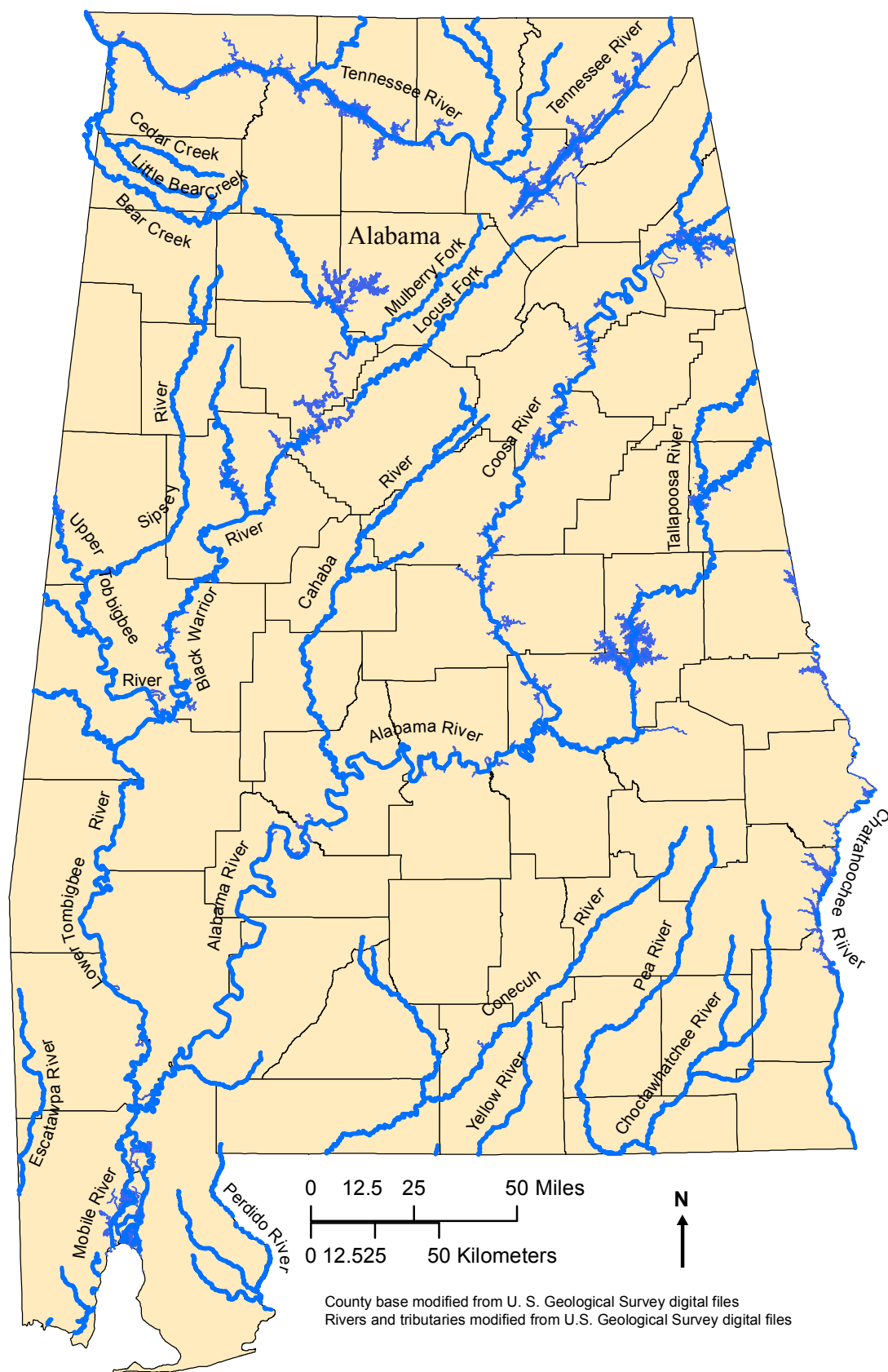
Figure 4. Major rivers and tributaries in Alabama

Figure 5. Principal aquifers in Alabama

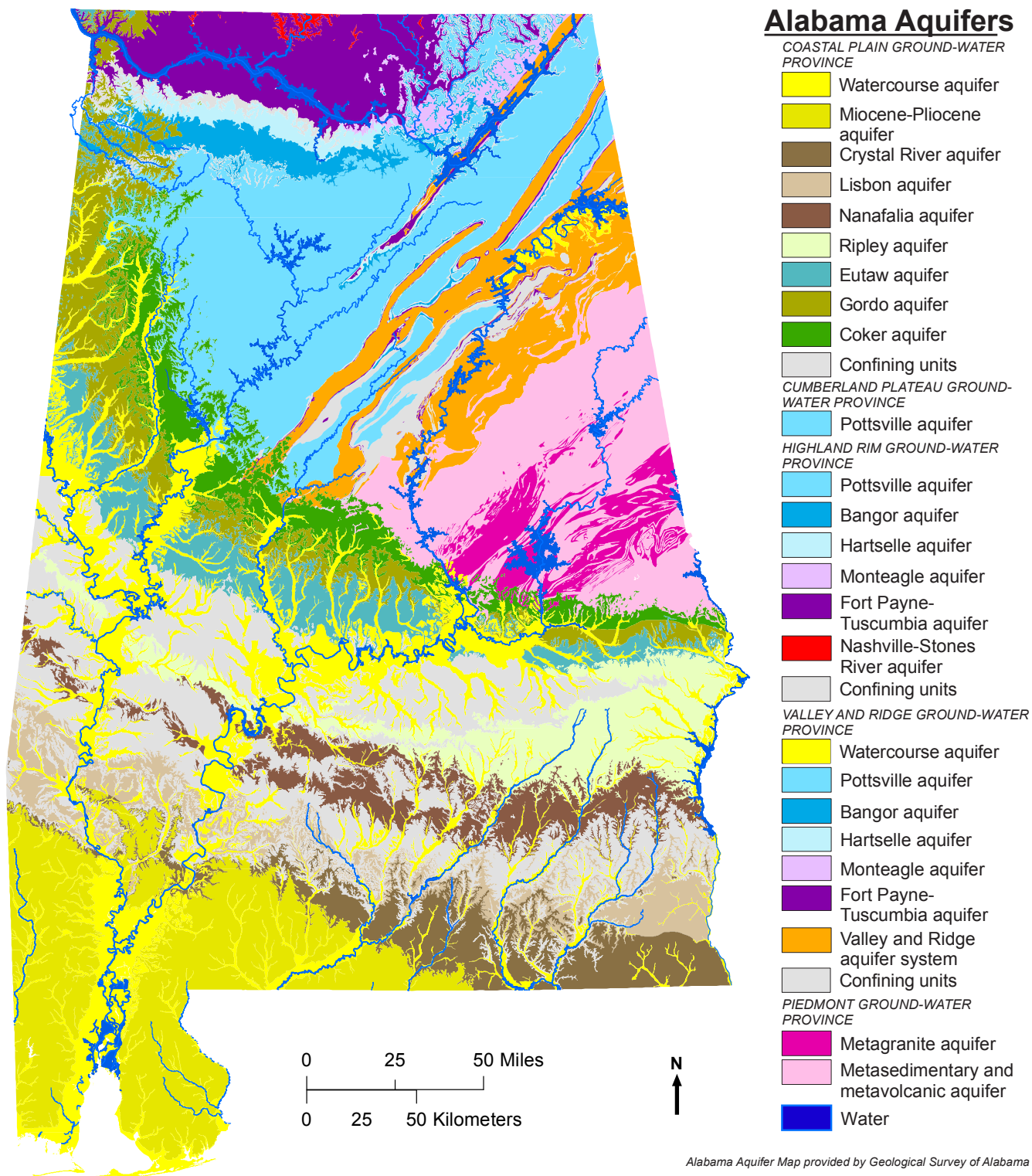
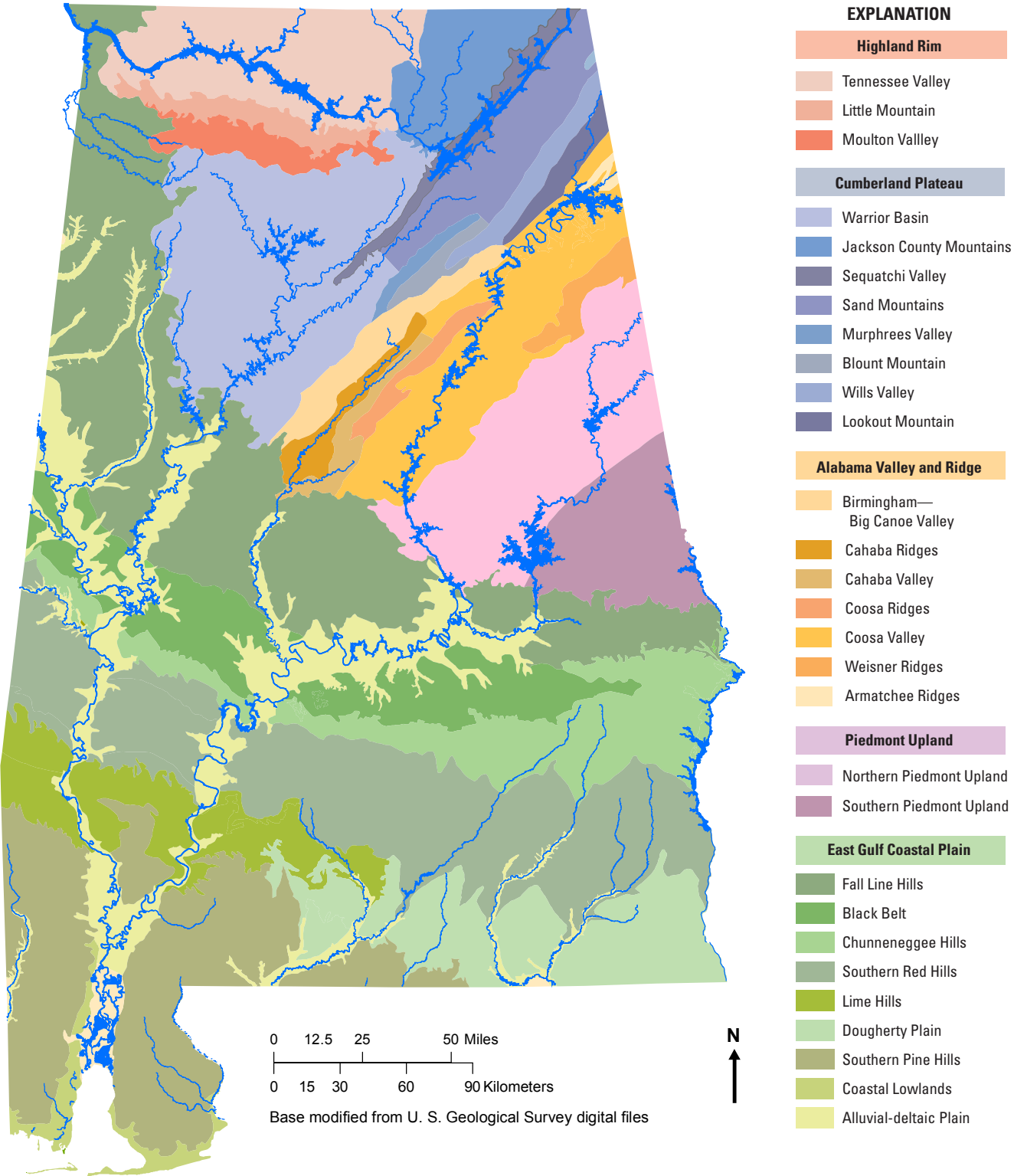


Figure 6. Alabama physiography



the Alabama River and its tributaries, the Cahaba, Coosa, and Tallapoosa Rivers, to form the Mobile River (figure 4). The rivers traverse the East Gulf Coastal Plain, Cumberland Plateau, Alabama Valley and Ridge, and Piedmont Upland and drain 32,207 square miles in Alabama. Supplemented by groundwater, the rivers provide water to communities such as Birmingham, Mobile, Montgomery, and Tuscaloosa. Groundwater use is greatest in the East Gulf Coastal Plain with some locally productive aquifers in the Piedmont Upland, Alabama Valley and Ridge, and Cumberland Plateau areas that are used for various purposes (Journey and Atkins, 1997; Kidd and others, 1997; Mooty and Kidd, 1997; Robinson and others, 1997).

The Conecuh, Yellow, Pea, and Choc-tawhatchee Rivers, which originate in Alabama, and the Chattahoochee River, which originates in Georgia, traverse southeastern Alabama. Groundwater from the relatively unconsolidated Mesozoic and Cenozoic sediments underlying the Coastal Plain (Chapman and Peck, 1997; Mayer, 1997; DeJarnette, 1989) is the source of public supply for most southeastern Alabama communities, including Andalusia and Dothan; however, some surface water is used for aquaculture, industry (Conecuh River), irrigation, livestock, and mining. The cities of Opelika, Phenix City, Smiths Station, and the East Alabama Water, Sewer and Fire Protection District, which serves Chambers County, withdraw water from the Chattahoochee River.

Acknowledgments

The authors thank the personnel from the many Federal, State, and local agencies and universities in Alabama that contributed data, maps, and photographs. This included Dennis Harrison and George Cox, The Drinking Water Branch, Alabama Department of Environmental Management, for access to the 2010 public-supply monthly operational reports; Henry Moore, Senior GIS Specialist, of the Alabama Department of Economic and Community Affairs, Information Services Section, for creating the base maps and choropleths; and Amy Gill, USGS Alabama Water Science Center, for her technical support and expertise.

Data Compilation, Sources of Information, and Methodology

Water-use data were compiled for eight categories by county and for five categories by hydrologic subregion and subbasin (figs. 2 and 3; Appendix C). **Site-specific data** were used as a basis for estimates for public supply, public-supplied deliveries, self-supplied industrial, mining, thermoelectric power, golf course, nursery, and sod irrigation. **Aggregated** county-level data were used as a basis for estimates for self-supplied residential, crop irrigation, livestock, and aquaculture. This section contains a detailed description of the methodology and sources of data used for determining total population; public-supply and residential water-use amounts; population served and self-supplied residential population; irrigation withdrawals and irrigated acreage; livestock, aquaculture, and mining withdrawals; and thermoelectric-power and industrial withdrawals.

Data category by source and type of data are listed in table 1. Some sources, such as OWR, provided site-specific water withdrawal and source of water data for public suppliers, industries, and thermoelectric plants. Some sources, such as U.S. Department of Agriculture (USDA), provided county-level ancillary data, such as crop acreage, crop type, and crop application rate, which could be used to estimate an aggregated county irrigation water withdrawal. Some categories, such as irrigation, depended on several sources of data to estimate total water withdrawals. Sources of information are more specifically discussed in the following category sections.

This 2010 report is modeled after and uses similar terms and units from the 2005 Alabama water use report that was a joint effort of OWR and USGS. The terms and units are defined in the Glossary at the end of the report. For 2010, water use is defined as water withdrawals except for **total residential water use** (residential water use is used in place of **domestic water use** in this report) and **total industrial water use**. Total residential use is a combination of public-supplied residential deliveries and self-supplied residential withdrawals. Total industrial water use, calculated at the State level only, combines self-supplied industrial and **commercial** withdrawals and public-supplied industrial and commercial deliveries. The term “**public supplier**” is the preferred term used in place of either public water system or community water system. A public supplier is defined as a public water system which serves at least 15 service connections used year-round or regularly serves at least 25 individuals at least 60 days out of the year. All water withdrawals in this report were compiled as **freshwater**, although some low-salinity and high-salinity withdrawals for aquaculture and low-salinity withdrawals for mining occurred in the State.

Water withdrawals are reported to the county, 4-digit hydrologic subregion, and 8-digit subbasin level (U.S. Geological Survey, 2007; U.S. Department of Agriculture, 2004; U.S. Department of Agriculture, Soil Conservation Service, 1993). Annual water use is expressed in terms of million gallons per day. Irrigation application rate is expressed as acre-feet per acre. Water use is normalized as a per capita use statistic (gallons per capita per day) in five different ways.

- Total water use is divided by the total population to yield gross per capita use and includes water used to generate electricity, support industrial and agricultural activities, and provide drinking water.
- Public-supply water use is divided by the population served by public suppliers to yield **gross public-supply per capita use** and includes water delivered to the residential, industrial, commercial, and thermoelectric power sectors and public use and losses.
- Public-supply residential deliveries are divided by the population served to yield **public-supplied residential per capita use**.
- Self-supplied residential water withdrawals are divided by self-supplied population to yield **self-supplied residential per capita use**.
- Public-supplied residential deliveries plus self-supplied residential withdrawals are divided by the total population to yield **residential per capita use**.

In the tables, State, county, subregion, subbasin, and facility data are presented to two decimal places. In the text, water withdrawal totals are reported as whole numbers unless the use of decimals is needed to improve clarity. Percentages are based on the 2-digit values in the tables and are expressed as whole numbers. All values are rounded independently; therefore, the sums of individually rounded numbers may not equal the totals given in this report.

Total Population

The 2010 estimate of population by subbasin was derived from the 2010 county census numbers (U.S. Census Bureau, 2011). Using **geographic information system** (GIS) spatial techniques, the 2010 block-group population estimate was converted to the geometric centroid and aggregated to the subbasin.

Public-Supply and Residential Water Use

For public supply, estimates were made for groundwater and surface-water withdrawals at the county and subbasin levels, for residential deliveries and population served at the county level, and for industrial and commercial deliveries and public use and losses at the State level. Public-supply withdrawal estimates mostly were based on site-specific data (table 1). Raw water pumpage, or the finished water production upon which water withdrawals were estimated, is metered and reported as monthly average daily rates of withdrawal to OWR through mandatory annual AWURP reports, and to the Drinking Water Branch—Alabama Department of Environmental Management (DWB-ADEM) through mandatory **monthly operational reports** (MORs). Water sold to or purchased from other public suppliers was not included in this study. To ensure that the water withdrawals were compiled for the geographical area in which the withdrawals occurred, the county and subbasin locations of the water plants, surface-water intakes, wells, or well fields were verified using GIS techniques. A comprehensive list of public suppliers was compiled from records from Alabama OWR, DWB-ADEM, Alabama Rural Water Association (ARWA), and the web-based Safe Drinking Water Information System (SDWIS) maintained by U.S. Environmental Protection Agency (USEPA) (U.S. Environmental Protection Agency, 2011).

Residential and industrial/commercial deliveries and public use and loss estimates were based on a survey of the public suppliers conducted by OWR (Appendix D, figure D1). Responses from public suppliers were used to estimate residential deliveries for public suppliers with similar demographic and geographic characteristics who had not responded. Water withdrawals and residential deliveries were counted in the county or subbasin in which they occurred. Public use and losses were estimated at the county level and reported only at the State level. Industrial/commercial deliveries were calculated by subtracting total residential deliveries and public use and losses from total public-supply water withdrawals.

Residential water use is the sum of residential deliveries plus self-supplied residential withdrawals. Self-supplied residential withdrawals were not reported as part of the AWURP and were not collected as part of this study. Instead, self-supplied residential withdrawals were estimated from a self-supplied population and a per household use coefficient for each county. The self-supplied population was divided by the number of persons per household in 2010 to yield the number of self-supplied housing units in 2010. The per household use coefficients were derived from a subset of the OWR Alabama Public Water System Survey consisting of the small public suppliers with primarily rural residential deliveries. Self-supplied households were assumed to use the same amount of water as public-supplied rural households. For 2010, the average monthly rural household use by county ranged from 3,900 to 10,100 gallons per month. Based on the limitations of this data at the county level, no subbasin analysis was developed for this report.

Population Served and Self-Supplied Residential Population

County populations and numbers of households (2006-2010) were taken from Census Quickfacts at <http://quickfacts.census.gov/qfd/states/01000.html>. Population served by public suppliers and self-supplied population were estimated for each county by multiplying Quickfacts county population estimates by the percentages of public-supplied and self-supplied population determined for the 2005 water use compilation.

Irrigation

The irrigation category consists of surface-water and groundwater withdrawals and the number of acres by irrigation-system type for crops, nurseries, sod farms, and golf courses. Estimates of water withdrawals by county for crops were derived from the estimated number of acres in 2007 and a statewide crop application rate by crop type (U.S. Department of Agriculture, National Agricultural Statistics Service, 2009). Certain irrigated crop types in various counties were not available due to disclosure reasons. In the counties where this occurred, the average

application rate for all crops grown that were not disclosed was used in place of the particular crop application rate. Crop application rates ranged from 0.45 to 2.72 acre-feet per acre. Sprinkler systems typically were used to irrigate corn, cotton, soybeans, and vegetables; microirrigation systems typically were used to irrigate fruits, nuts, and vegetables; and surface systems typically were used to irrigate vegetables. In the short-term, application rates are likely to vary annually according to the amount and timing of precipitation, antecedent soil conditions, and crop type. Due to the nondisclosure of some of the irrigated crop type, determining the percent of acreage irrigated by sprinkler, microirrigation, and surface systems was not completed. Over the long-term, application rates are influenced by changes in technology and farming practices and climate.

Water withdrawals for nursery and sod farm operations were estimated from the number of acres per operation (Alabama Department of Agriculture and Industries, Division of Plant Protection, 2011) and by using an application of 3.74 acre-feet per acre. The application rate was developed as part of the 2005 water use report process. The percentage of surface-water and groundwater withdrawals by county was determined independently for crops, nurseries, and sod farms from site-specific data in eWater, local water-supply characteristics, and historical water-use patterns. Crop (food and feed crops), nursery, and sod farm water withdrawals and acreage by irrigation-system type were combined in the crop irrigation subcategory.

Water withdrawals for golf courses were estimated from site-specific data in eWater, a web search (TheGolfCourses.net, 2011), an OWR golf course water-use survey, and interviews with selected golf course staff on watering practices. All water withdrawals were assumed to be from surface water and applied with sprinkler systems because reliable source-of-supply data were limited; however, some golf courses were known to use groundwater in 2010. The 292 golf courses, covering approximately 26,900 acres, were classified into three tiers: Tier 1, extensive watering; Tier 2, frequent watering; and Tier 3, essential watering (table 2). A

water withdrawal was estimated for each golf course based on the number of holes and the tier classification coefficient. For example, an 18-hole golf course in Tier 1 would have withdrawn 0.289 MGD in 2010. Although the dataset from which the application rates were derived indicated individual differences in withdrawal amounts across the State according to geographic location, soil types, and management practices, the tier classification represents typical golf course usage based on watering practices.

In Alabama, some golf courses are able to water greens, tees, fairways, and often, driving ranges and ornamental plants and shrubs, because of the installation of an extensive irrigation system and plentiful water (Tier 1). Other golf courses water less extensively, often only tees and greens (Tier 2). The remaining golf courses, because of cost or a limited water supply, confine watering to greens and sometimes tees and fairways if the viability of the turf is threatened and water is available (Tier 3). Generally, watering for all tiers occurs every 3 days; however, weather conditions can affect the watering schedule. Warmer and drier weather necessitates more watering while cooler or wetter weather necessitates less watering. Most of the watering occurs May through October; any additional watering from November through April is generally to aid in application of fertilizer or herbicides.

Water withdrawals by subbasin were determined for each subcategory crop, which includes crops, nurseries, and sod farms, by applying GIS techniques. The subbasin boundaries were superimposed on the county boundaries to create a subbasin/county areal unit. Each subbasin/county unit represents a percent of the subbasin area within a county. Surface-water and groundwater withdrawals were distributed among the subbasin/county units based on the assigned areal percentage. Water withdrawals for each subbasin/county unit were summarized by subbasin. The difference in the county and subbasin totals was 0.05 MGD (+0.03 MGD for groundwater and +0.02 MGD for surface water). No attempt was made to balance the withdrawals because the difference in totals was due to methodology and the resulting rounding differences

produced for 67 counties compared to 53 subbasins. Addresses obtained from the master lists for golf courses were used to assign the estimated withdrawals for the specific sites to the correct subbasin.

Livestock, Aquaculture, and Mining

County-level water withdrawals by source for livestock, aquaculture, and mining were from estimates determined by the USGS National Water Use Information Program (NWUIP) as part of the federal effort to estimate water use for the United States for 2010. Livestock withdrawals are not reported as a specific category within the AWURP and were not collected as part of this study. Estimates of livestock withdrawals by county were calculated from the 2007 Census of Agriculture and state-level per animal water use coefficients. Methods used to estimate withdrawals for livestock are documented in "Method for Estimating Water Withdrawals for Livestock in the United States, 2005" (Lovelace, 2009).

Water withdrawals for livestock by subbasin were determined by applying GIS techniques. The subbasin boundaries were superimposed on the county boundaries to create a subbasin/county areal unit. Each subbasin/county unit represents a percent of the subbasin area within a county. Surface-water and groundwater withdrawals were distributed among the subbasin/county units based on the assigned areal percentage. Water withdrawals for each subbasin/county unit were summarized by subbasin. The difference in the county and subbasin totals was 0.05 MGD (+0.01 MGD for groundwater and +0.04 MGD for surface water). No attempt was made to balance the withdrawals because the difference in totals was due to methodology and the resulting rounding differences produced for 67 counties compared to 53 subbasins.

The National Agricultural Statistics Service (NASS) did not conduct a Census of Aquaculture in 2010, so the methods used in 2005 could not be replicated. Limited aquaculture data that was collected during the 2002 and 2007 Census of Agriculture were used. No new data pertaining to water source or noncommercial operations were collected

during the 2007 Census of Agriculture. As a result, withdrawal rates for noncommercial operations during 2010 were assumed to be unchanged from 2005. Data available for commercial aquaculture operations included the number of aquaculture farms, pounds of aquaculture products sold, and number of aquaculture products sold during 2002 and 2007. Because commercial aquaculture farms could report either pounds sold or numbers sold, the data could not be assumed to have been consistently reported during 2002 and 2007 and could not be used for comparison. Therefore, the only usable NASS data were the number of farms in operation in each county during the two reporting years (2002 and 2007). Groundwater and

surface-water data were divided according to the percentage of water withdrawn reported in the 2005 report (U.S. Geological Survey, 2014). Since this NASS data was only aggregated at the county level, no subbasin analysis was developed for this report.

Mining water use was estimated from per ton water-use coefficients and crude ore production in tons for 2010 from the USGS Minerals Information Team, from coal production in tons from the Department of Energy, Energy Information Administration (DOE-EIA), and from site-specific mining withdrawal data reported to the AWURP. Methods used to estimate withdrawals for mining are

Table 1. Summary of data sources by category and type of data

WATER-USE CATEGORY	DATA SOURCES	TYPE OF DATA
Public supply	OWR	Active public suppliers Monthly average-daily water withdrawals Source of water
	ADEM	Public-supplier water deliveries by sector Active public suppliers Monthly average-daily water withdrawals Source of water
	USEPA–SDWIS	Active and inactive public suppliers
	U.S. Census Bureau	Total population, total number of housing units, 2010 Persons per household, 2010 County population estimates, 2010
Residential	OWR	Public-supplier water deliveries by sector
	U.S. Census Bureau	Persons per household by county, 2010 County population estimates, 2010
Irrigation	OWR	Source of water for crops, nurseries, and sod farms
	USDA–NASS	Irrigated acreage and crop types by county, 2007; application rates, Nursery and sod farm listing http://www.thegolfcourses.net/golfcourses/AL/Alabama.htm Golf course listings and ancillary information
Livestock	USGS–NWUIP	County estimates of water withdrawals by source and quality of water
Aquaculture	USGS–NWUIP	County estimates of water withdrawals by source and quality of water
Mining	USGS–NWUIP	County estimates of water withdrawals by source and quality of water
	OWR	Some mine sites, monthly average-daily water withdrawals
Industry	OWR	Water withdrawals by source of water
Thermoelectric power	DOE–EIA	Water withdrawals by source and quality of water; power generation
	OWR Thermoelectric-power plants	Water withdrawals Power generation

Table 2. Golf course classification and tier classification coefficients

[Classification coefficient is amount applied, in million gallons per day.]

GOLF COURSE CLASSIFICATION	TIER CLASSIFICATION COEFFICIENTS	ACRES IRRIGATED
Tier 1 extensive watering	0.289	110
Tier 2 frequent watering	0.134	100
Tier 3 essential watering	0.018	55

documented in “Method for Estimating Water Withdrawals for Mining in the United States, 2005” (Lovelace, 2009). Since this data was only developed at the county level by the USGS, no subbasin analysis was developed for this report.

Thermoelectric Power and Industrial

Thermoelectric-power and industrial water use were estimated from site-specific data. The primary sources of data for thermoelectric-power water withdrawals and power produced were the AWURP database—eWater, DOE-EIA, and the individual thermoelectric-power facilities (table 1). Water withdrawals were reported in the county or subbasin in which the withdrawals occurred. It was not possible to separate the power for a nuclear plant that used both once-through cooling and closed-cycle cooling. All power, therefore, was reported with the larger withdrawals associated with once-through cooling instead of the smaller withdrawals associated with closed-cycle cooling.

The AWURP application, eWater, stores monthly average daily water withdrawal information as well as location and source type information. For 2010, steam-electric

plants with a nameplate rating of 10 megawatts or more provided information about cooling type, water withdrawal, return flow, and consumptive use by generating unit (except for nuclear power plants) to DOE-EIA, and all power plants provided power generation by generating unit (Energy Information Administration, 2008; Energy Information Administration, 2009a; Energy Information Administration, 2009b).

Total industrial water use is the sum of self-supplied industrial and commercial withdrawals and public-supplied industrial and commercial deliveries. Monthly self-supplied industrial withdrawals by source were reported by individual industries to the AWURP for 2010. NAICS codes for those industries were obtained from the Alabama Directory of Manufacturers (Alabama Department of Commerce, 2014). Public-supply deliveries to industrial and commercial users were determined at the State level from the OWR Alabama Public Water System Survey for 2010 (Appendix D, figure D1).

Water Use

Water in river and reservoir systems is used instream for hydroelectric power generation, navigation, recreation, maintaining minimum streamflows to support fish and wildlife habitat, and for wastewater assimilation. Groundwater contributes to base flow in streams and rivers. Water also can be withdrawn from rivers, reservoirs, and aquifers to meet offstream needs for public supply, self-supplied residential, irrigation, livestock, aquaculture, self-supplied industrial, mining, and thermoelectric-power generation. The term “water use” in this report refers to offstream water withdrawals, and for the purpose of this report, the water use estimates provided are for water withdrawals only. A conceptual diagram of how water is used is described in figure 7. Only the withdrawal-delivery transaction from either a groundwater or surface-water source to a water-using entity is accounted for in this report (A to B in figure 7). Additional water-use transactions are **delivery-release** (B to C), release-delivery (C to B), and release-return (C to D, figure 7).

Instream use occurs without diverting or withdrawing water from surface-water sources. Although assessing instream water use in the Alabama subbasins was beyond the scope of this report, some hydroelectric power and navigation instream-use statistics were included because instream uses compete with offstream uses and can affect the quality and quantity of available water. Hydroelectric power is generated in Alabama by the PowerSouth Energy Cooperative, Alabama Power Company (APCO), Tennessee Valley Authority (TVA), and U.S. Army Corps of Engineers (USACE)—Mobile District at 21 mainstem and tributary locations (Appendix E, table E1; figure E1). Georgia Power Company (GPC) and the USACE generate power from six facilities located on the Chattahoochee River bordering Alabama. Total generating capacity for the 27 plants is 3.58 gigawatts.

Navigation maintenance within Alabama is important for commercial shipping and recreational boating. USACE tries to maintain a 9-foot (ft) channel on the navigable stretches of the Alabama-Coosa-Tallapoosa and the Apalachicola-Chattahoochee-Flint river systems. TVA maintains an 11-ft. channel on the mainstem of the Tennessee River, and the U.S. Coast Guard maintains a 12-ft. channel in the Intracoastal Waterway. Passage also is maintained on many miles of secondary channels for recreational use. The instream use of hydroelectric power and navigation does not affect consumptive use because the water remains in the river systems.

Figure 7. Schematic showing the interrelation of water-using sites and water use transactions to sources of supply (modified from Hutson and others, 2004b).

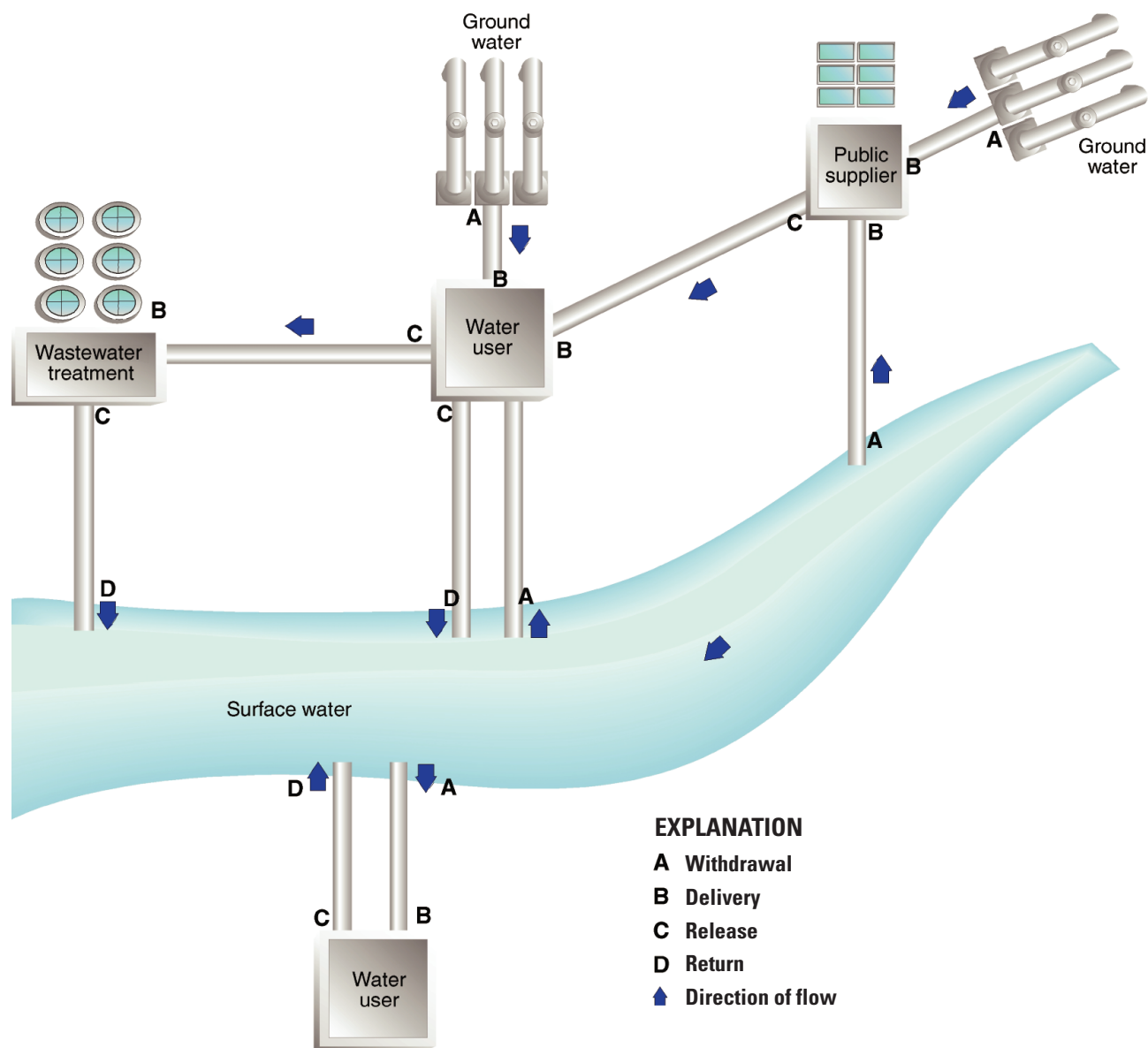
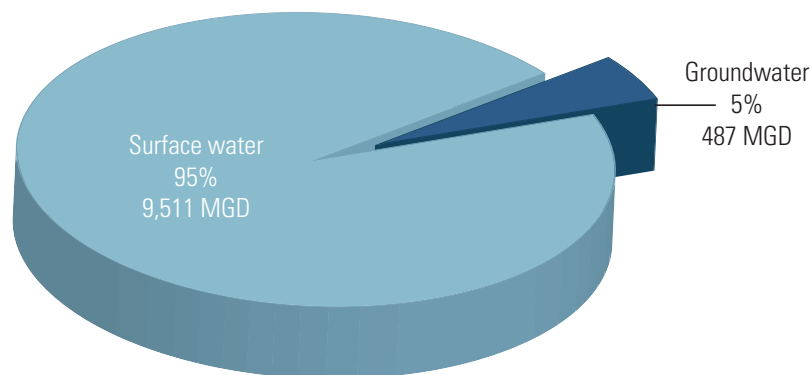


Figure 8. Sources of water used in Alabama, 2010

[MGD, million gallons per day, Values may not sum to total estimated use because of rounding.]



Total Water Use

Total water use in Alabama for 2010 was determined from estimates of water withdrawals for eight categories—public supply, self-supplied residential, irrigation, livestock, aquaculture, self-supplied industrial, mining, and thermoelectric power. Total freshwater withdrawals were estimated to be 9,998 MGD. Estimates of withdrawals by source indicate that total surface-water withdrawals were 95 percent of the total (9,511 MGD), and the remaining 5 percent was from groundwater (487 MGD; figure 8). Gross per capita use averaged 2,092 gal/d for the 4,779,736 residents in Alabama (U.S. Census Bureau, 2011). Gross per capita use is the total water withdrawn divided by the total population. The large per capita use is a result of the large thermoelectric-power withdrawals in relation to the population size. Values may not sum to total estimated use(s) because of rounding.

Total residential water use, which is a combination of public-supplied residential deliveries and self-supplied residential withdrawals, was 367 MGD (see the “Residential” section in this report). Total industrial water use, which is a combination of self-supplied industrial and commercial withdrawals (562 MGD) and public-supplied industrial and commercial deliveries (393 MGD), was 955 MGD (see the “Industrial” section in this report).

Total withdrawals by source and category for counties and hydrologic subbasins are listed in tables 3-6. For 2010, thermoelectric power accounted for 83 percent of the total water withdrawals or 8,257 MGD (table 5; figure 9). Combined, the public supply and self-supplied industrial categories accounted for 14 percent of the total withdrawals (833 MGD and 562 MGD, respectively) and irrigation, aquaculture, self-supplied residential, livestock, and mining made up the remaining 3 percent. Surface water is the primary source for all categories except aquaculture, mining, and self-supplied residential (tables 7-10). Eighty-seven percent (87%) of the surface-water withdrawals were for thermoelectric power, and the largest surface-water withdrawals were in Limestone County (table 7). Sixty-five percent (65%) of the surface-water withdrawals—primarily for thermoelectric power—occurred in Limestone, Jackson, Colbert (Middle Tennessee–Elk subregion), and Mobile (Mobile–Tombigbee subregion) Counties. More than half of the groundwater withdrawals (58%) were for public supply (table 9). Thirteen percent (13%) or 62 MGD of the statewide groundwater use was in Baldwin County. Sixty percent (60%) of Baldwin County’s groundwater use was for irrigation, and 37 percent was for public supply. The 14 counties withdrawing 10 MGD or more of groundwater, primarily for public supply and irrigation, accounted for 61 percent of the

total groundwater withdrawals in the State (table 9).

The geographic distribution of total, groundwater, and surface-water withdrawals by county and by hydrologic subbasin is shown in figures 10 and 11. The largest total water withdrawals occurred in Limestone, Colbert, Mobile, and Jackson Counties (63 percent of the total), primarily to meet the cooling needs at thermoelectric-power plants. Excluding thermoelectric power, the largest withdrawals occurred in Morgan, Mobile, Jefferson, Colbert, and Madison Counties (table 5).

Estimates of public supply, irrigation, livestock, self-supplied industrial, and thermoelectric-power withdrawals by source of water and by hydrologic subregion and subbasin are shown in tables 6, 8, and 10. These categories accounted for 99 percent (9,880 MGD) of the total estimated withdrawals. The exclusion of the small aquaculture, mining, and self-supplied residential withdrawal

amounts does not affect the understanding of the overall distribution pattern of water use in the State. The Middle Tennessee–Elk subregion accounted for 55 percent (5,476 MGD) of the 9,880 MGD total estimated withdrawals. Ninety two percent (92%) of that water was for thermoelectric power, and nearly all of the water was surface water. Excluding thermoelectric power, the Middle Tennessee–Elk subregion accounted for 27 percent of the water withdrawals statewide. The second largest use category in the Middle Tennessee–Elk subregion was self-supplied industrial, approximately 50 percent (218 MGD) of the total withdrawals excluding thermoelectric power in the subregion.

Figure 12 provides an overview of the sources and use of water in Alabama. In this figure, the eight water-use categories mentioned above have been grouped into four categories of similar water uses: thermoelectric power, industrial (combined self-supplied

Figure 9. Comparison of freshwater withdrawals by category of use in Alabama, 2010

[Values may not sum to total estimated use because of rounding.]

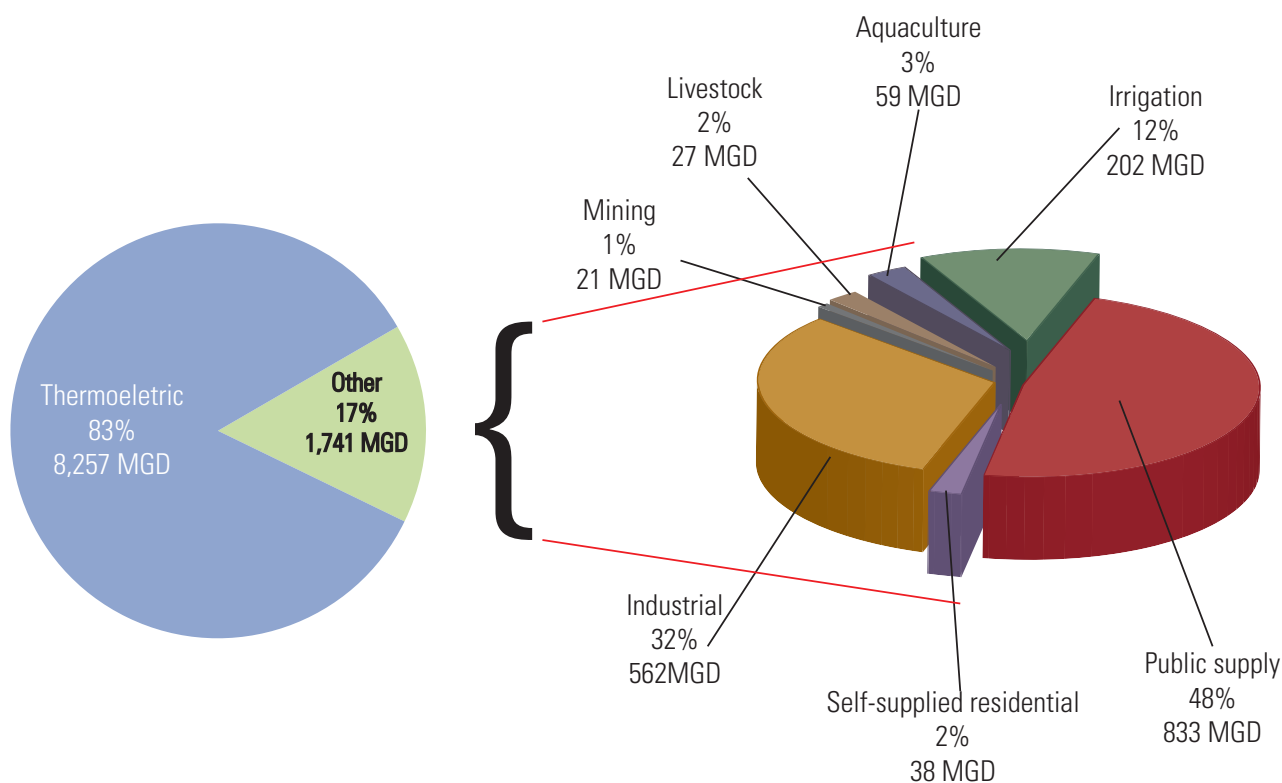


Figure 10. Total freshwater withdrawals by source and county in Alabama, 2010

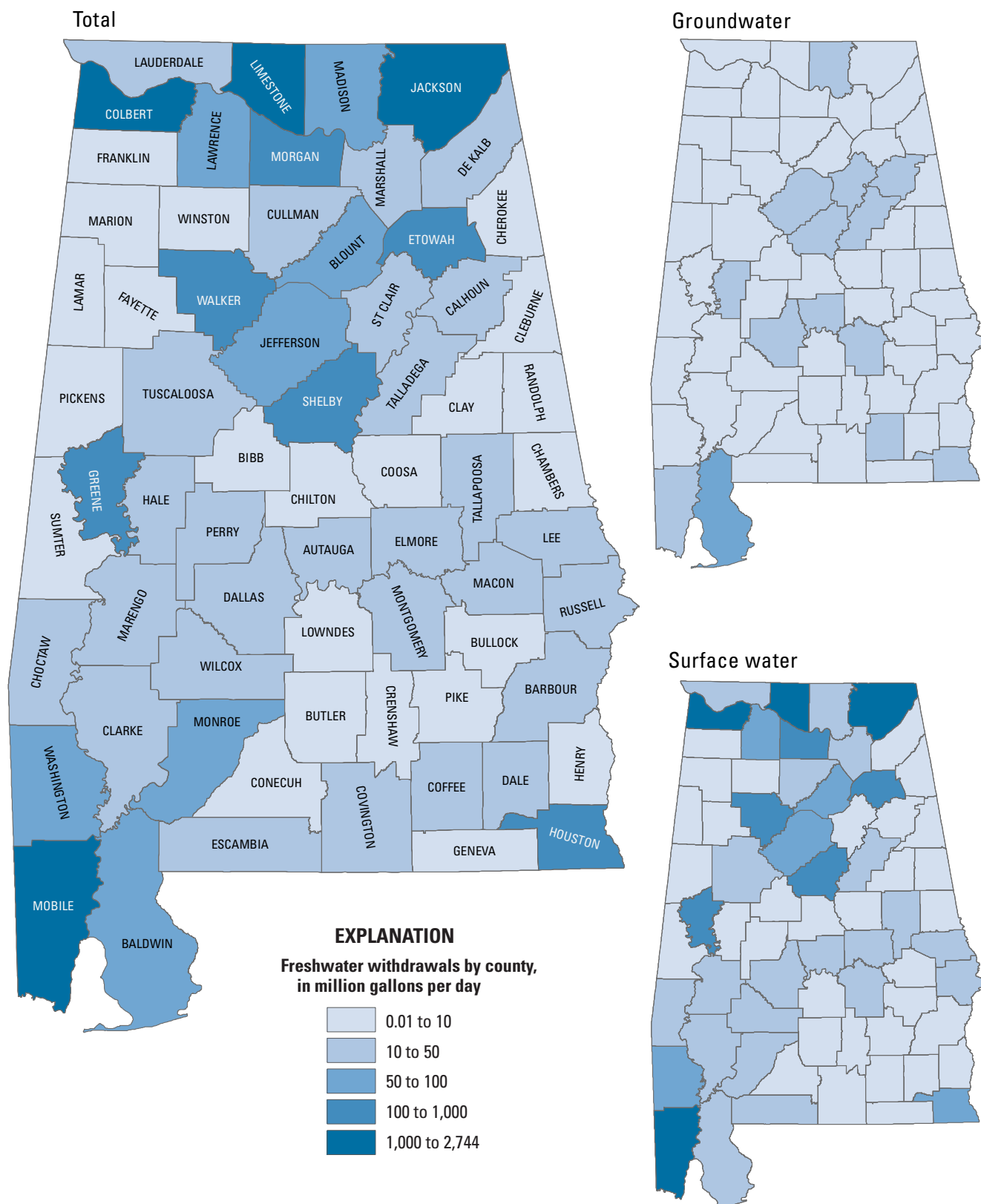
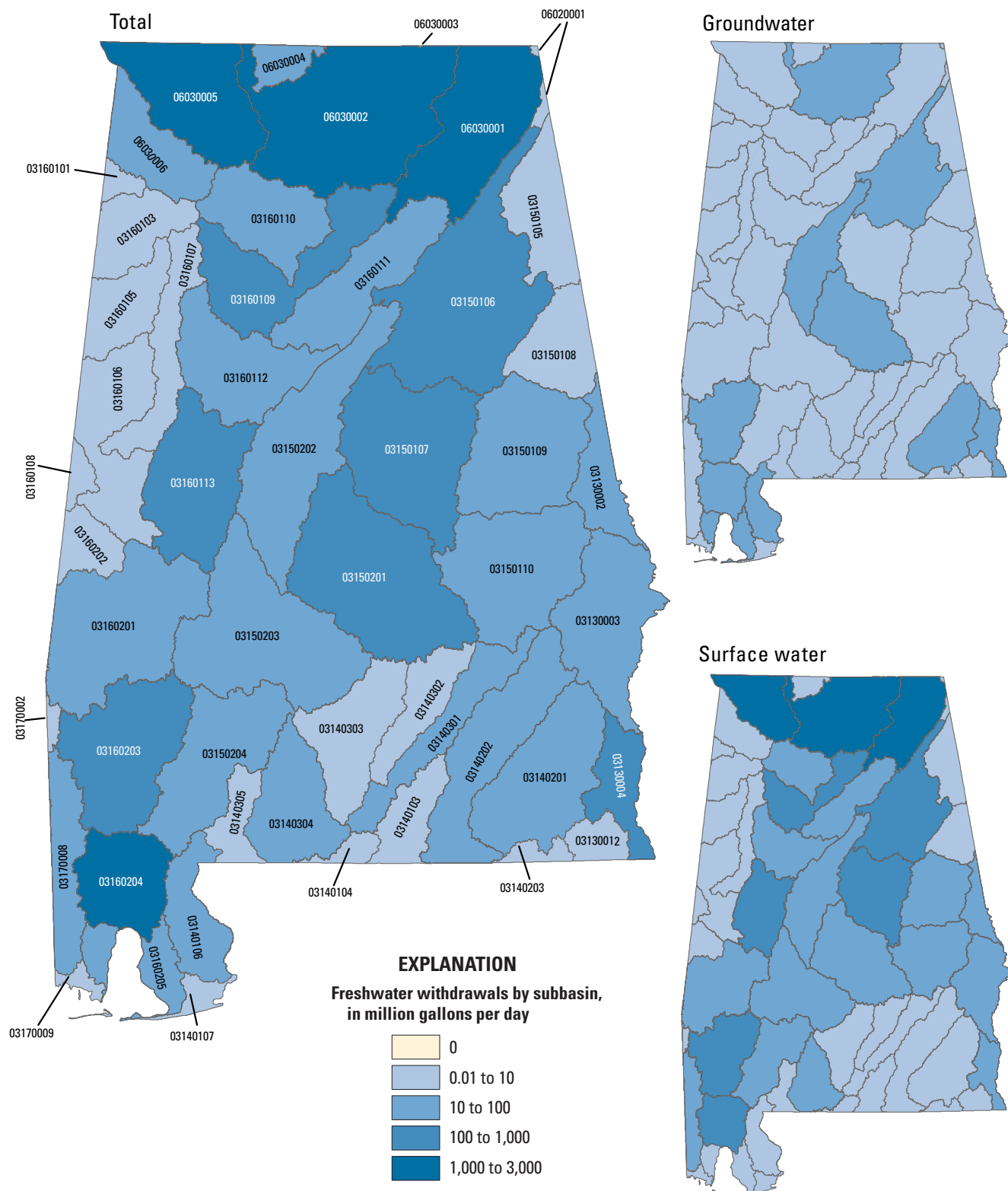


Figure 11. Total freshwater withdrawals by source and hydrologic subbasin in Alabama, 2010



industrial, commercial, and mining withdrawals and industrial, commercial, and thermoelectric-power deliveries), residential (combined self-supplied residential withdrawals, public-supplied residential deliveries, and public use and losses), and agriculture (aquaculture, irrigation, and livestock). Figure 12 shows that surface water was the source for 9,511 MGD (table 7); of this total, 8,257 MGD was used for thermoelectric power. The 833 MGD (table 5) withdrawn by public suppliers was distributed to commercial and industrial (393 MGD) and residential (328 MGD) and public use and losses (111 MGD).

Figure 12. Sources and use of water in Alabama, 2010

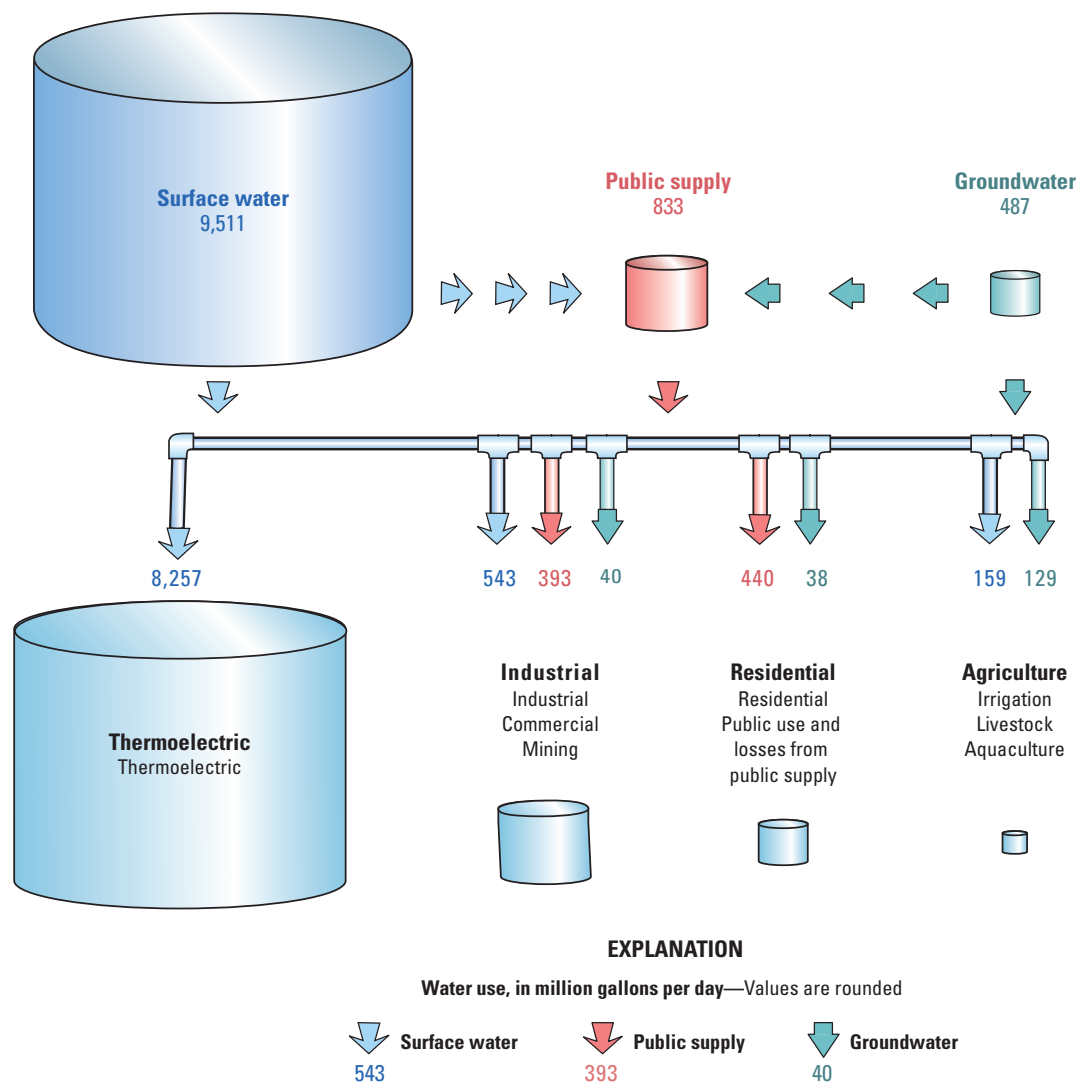


Table 3. Total freshwater withdrawals by source and county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	Population	Withdrawals by source in million gallons per day			Gross per capita use, in gallons per person per day
		Groundwater	Surface water	Total	
Autauga	54,571	10.21	38.09	48.30	885
Baldwin	182,265	62.37	10.79	73.16	401
Barbour	27,457	6.81	4.72	11.53	420
Bibb	22,915	5.54	1.62	7.16	313
Blount	57,322	4.17	53.29	57.46	1,002
Bullock	10,914	4.20	1.96	6.16	565
Butler	20,947	3.77	1.78	5.55	265
Calhoun	118,572	22.51	7.71	30.22	255
Chambers	34,215	1.00	4.55	5.55	162
Cherokee	25,989	3.18	3.52	6.70	258
Chilton	43,643	4.75	2.09	6.84	157
Choctaw	13,859	2.14	40.97	43.11	3,111
Clarke	25,833	2.96	21.33	24.29	940
Clay	13,932	0.61	1.92	2.53	181
Cleburne	14,972	0.91	1.11	2.02	135
Coffee	49,948	11.80	2.84	14.64	293
Colbert	54,428	1.80	1,342.71	1,344.51	24,703
Conecuh	13,228	2.20	0.30	2.50	189
Coosa	11,539	0.85	0.09	0.94	81
Covington	37,765	7.19	3.67	10.86	287
Crenshaw	13,906	2.53	0.68	3.21	231
Cullman	80,406	2.77	34.18	36.95	460
Dale	50,251	8.07	2.32	10.39	207
Dallas	43,820	12.55	37.08	49.63	1,132
De Kalb	71,109	4.40	9.11	13.51	190
Elmore	79,303	5.04	11.50	16.54	209
Escambia	38,319	9.33	34.41	43.74	1,141
Etowah	104,430	5.54	142.33	147.87	1,416
Fayette	17,241	0.66	3.52	4.18	243
Franklin	31,704	2.22	5.77	7.99	252
Geneva	26,790	4.68	2.14	6.82	254
Greene	9,045	7.50	359.01	366.51	40,521
Hale	15,760	13.99	6.35	20.34	1,291
Henry	17,302	3.72	3.34	7.06	408
Houston	101,547	26.45	93.07	119.52	1,177

Table 3. Total freshwater withdrawals by source and county, Alabama, 2010 — Continued

[Values may not sum to totals because of independent rounding.]

County	Population	WITHDRAWALS by source in million gallons per day			Gross per capita use, in gallons per person per day
		Groundwater	Surface water	Total	
Jackson	53,227	2.04	1,065.38	1,067.42	20,054
Jefferson	658,466	10.42	74.94	85.36	130
Lamar	14,564	2.04	0.22	2.26	155
Lauderdale	92,709	3.82	12.76	16.58	179
Lawrence	34,339	0.93	70.64	71.57	2,084
Lee	140,247	2.27	17.28	19.55	139
Limestone	82,782	5.01	2,738.34	2,743.35	33,139
Lowndes	11,299	1.73	4.70	6.43	569
Macon	21,452	3.55	6.46	10.01	467
Madison	334,811	33.56	44.53	78.09	233
Marengo	21,027	4.95	20.26	25.21	1,199
Marion	30,776	1.83	5.70	7.53	245
Marshall	93,019	6.29	24.76	31.05	334
Mobile	412,992	34.46	1,062.98	1,097.44	2,657
Monroe	23,068	4.14	46.69	50.83	2,204
Montgomery	229,363	17.37	22.18	39.55	172
Morgan	119,490	1.00	119.34	120.34	1,007
Perry	10,591	6.72	4.13	10.85	1,024
Pickens	19,746	3.94	1.60	5.54	281
Pike	32,899	6.01	1.38	7.39	225
Randolph	22,913	1.06	1.85	2.91	127
Russell	52,947	3.06	41.69	44.75	845
St Clair	83,593	11.46	1.69	13.15	157
Shelby	195,085	16.71	682.20	698.91	3,583
Sumter	13,763	4.57	4.27	8.84	642
Talladega	82,291	11.66	37.44	49.10	597
Tallapoosa	41,616	0.64	11.69	12.33	296
Tuscaloosa	194,656	4.26	34.68	38.94	200
Walker	67,023	1.07	958.78	959.85	14,321
Washington	17,581	9.11	80.53	89.64	5,099
Wilcox	11,670	1.75	20.69	22.44	1,923
Winston	24,484	0.94	1.31	2.25	92
Total	4,779,736	486.79	9,510.99	9,997.78	2,092

Table 4. Total freshwater withdrawals by source and hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	Population	WITHDRAWALS by source, in million gallons per day		
		Groundwater	Surface water	Total
APALACHICOLA				
03130002	51,634	0.24	12.87	13.11
03130003	106,825	7.16	43.77	50.93
03130004	32,219	14.27	92.29	106.56
03130012	30,787	6.14	1.39	7.53
Subtotal	221,465	27.81	150.33	178.14
CHOCTAWHATCHEE-ESCAMBIA				
03140103	19,325	2.05	0.92	2.97
03140104	1,067	0.24	0.14	0.38
03140106	34,649	16.12	2.23	18.35
03140107	29,923	9.31	1.50	10.81
03140201	160,577	25.66	6.86	32.52
03140202	54,662	9.93	3.98	13.91
03140203	6,220	1.02	0.47	1.49
03140301	25,055	8.36	3.53	11.89
03140302	14,571	1.88	0.67	2.55
03140303	23,503	3.59	1.81	5.40
03140304	27,156	5.92	34.24	40.16
03140305	18,502	2.59	0.25	2.84
Subtotal	415,210	86.67	56.60	143.27
ALABAMA				
03150105	43,691	2.93	5.56	8.49
03150106	341,077	41.53	202.19	243.72
03150107	153,230	7.66	679.52	687.18
03150108	23,758	0.74	1.68	2.42
03150109	66,269	0.52	18.28	18.80
03150110	184,292	6.13	37.79	43.92
03150201	325,522	38.57	76.09	114.66
03150202	429,425	28.48	58.56	87.04
03150203	28,484	3.60	21.31	24.91
03150204	22,236	5.76	47.07	52.83
Subtotal	1,617,984	135.92	1,148.05	1,283.97
MOBILE-TOMBIGBEE				
03160101	2,345	0.06	0.10	0.16
03160103	24,665	0.82	2.27	3.09
03160105	19,303	1.80	2.23	4.03

Table 4. Total freshwater withdrawals by source and hydrologic subregion and subbasin, Alabama, 2010 — Continued

[Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	Population	WITHDRAWALS by source, in million gallons per day		
		Groundwater	Surface water	Total
MOBILE-TOMBIGBEE —Continued				
03160106	27,337	5.05	1.03	6.08
03160107	17,293	1.01	0.83	1.84
03160108	927	0.05	0.04	0.09
03160109	131,001	2.53	974.48	977.01
03160110	52,288	0.93	20.91	21.84
03160111	318,634	3.81	65.71	69.52
03160112	280,592	1.53	35.88	37.41
03160113	108,271	5.42	357.23	362.65
03160201	33,848	4.27	60.99	65.26
03160202	6,596	0.19	1.34	1.53
03160203	36,957	11.56	103.50	115.06
03160204	187,430	26.29	992.87	1,019.16
03160205	257,063	26.78	5.24	32.02
Subtotal	1,504,550	92.10	2,624.67	2,716.77
PASCAGOULA				
03170002	0	0.01	0.01	0.02
03170003	0	0.00	0.00	0.00
03170008	77,148	7.70	70.93	78.63
03170009	16,260	2.58	0.39	2.97
Subtotal	93,408	10.29	71.33	81.62
MIDDLE TENNESSEE-HIWASSEE				
06020001	2,743	0.32	0.15	0.47
Subtotal	2,743	0.32	0.15	0.47
MIDDLE TENNESSEE-ELK				
06030001	147,721	7.16	1,090.00	1,097.16
06030002	569,928	38.02	2,959.08	2,997.10
06030003	0	0.00	0.00	0.00
06030004	17,220	0.58	9.68	10.26
06030005	155,370	3.31	1,357.75	1,361.06
06030006	34,137	1.61	8.60	10.21
Subtotal	924,376	50.68	5,425.12	5,475.80
Total	4,779,736	403.79	9,476.24	9,880.04

Table 5. Total freshwater withdrawals by category of use and county, Alabama, 2010

[Values may not sum to totals because of independent rounding. All values are in million gallons per day.]

County	WITHDRAWALS by category, in million gallons per day								Total
	Public supply	Residential	Irrigation	Livestock	Aquaculture	Industrial	Mining	Thermoelectric	
Autauga	5.08	0.37	3.61	0.15	0.00	33.13	0.13	5.83	15.17
Baldwin	22.97	1.71	47.76	0.35	0.16	0.00	0.21	0.00	73.16
Barbour	4.15	0.15	2.66	0.38	2.43	1.57	0.19	0.00	9.96
Bibb	4.90	0.15	0.23	0.07	1.45	0.00	0.36	0.00	7.16
Blount	54.60	0.89	0.87	0.98	0.00	0.00	0.12	0.00	57.46
Bullock	2.31	0.08	3.57	0.14	0.00	0.00	0.06	0.00	6.16
Butler	2.70	0.28	1.37	0.40	0.50	0.30	0.00	0.00	5.25
Calhoun	23.30	0.51	5.01	0.32	0.02	0.96	0.10	0.00	29.26
Chambers	4.31	0.71	0.35	0.18	0.00	0.00	0.00	0.00	5.55
Cherokee	3.50	0.52	2.39	0.28	0.00	0.00	0.01	0.00	6.70
Chilton	4.88	0.74	0.68	0.18	0.00	0.35	0.01	0.00	6.49
Choctaw	1.36	0.62	0.25	0.09	0.03	40.76	0.00	0.00	2.35
Clarke	3.04	0.38	0.16	0.08	0.06	20.22	0.35	0.00	4.07
Clay	1.66	0.48	0.08	0.30	0.01	0.00	0.00	0.00	2.53
Cleburne	0.56	0.77	0.39	0.30	0.00	0.00	0.00	0.00	2.02
Coffee	7.61	0.72	2.55	0.80	0.74	2.22	0.00	0.00	12.42
Colbert	8.79	0.27	2.37	0.29	0.00	69.76	0.73	1,262.30	1,274.75
Conecuh	1.69	0.32	0.19	0.16	0.14	0.00	0.00	0.00	2.50
Coosa	0.30	0.43	0.04	0.05	0.00	0.00	0.12	0.00	0.94
Covington	4.96	0.88	2.49	0.59	0.10	0.05	0.05	1.74	10.81
Crenshaw	2.06	0.19	0.29	0.67	0.00	0.00	0.00	0.00	3.21
Cullman	31.05	0.24	1.31	2.05	0.00	2.27	0.03	0.00	34.68
Dale	6.85	0.69	2.30	0.42	0.05	0.00	0.08	0.00	10.39
Dallas	5.88	0.64	2.95	0.30	7.14	32.33	0.39	0.00	17.30
De Kalb	7.11	1.32	2.15	2.06	0.00	0.77	0.10	0.00	12.74
Elmore	13.37	0.42	2.06	0.17	0.05	0.00	0.47	0.00	16.54
Escambia	5.65	0.63	1.82	0.14	0.03	35.06	0.41	0.00	8.68
Etowah	20.35	0.31	2.26	0.42	0.31	9.21	0.35	114.66	138.66
Fayette	2.04	0.52	0.32	0.16	0.04	0.00	1.10	0.00	4.18
Franklin	5.76	0.51	0.52	0.75	0.00	0.00	0.45	0.00	7.99
Geneva	1.98	0.76	3.05	0.80	0.13	0.00	0.10	0.00	6.82
Greene	1.10	0.35	0.27	0.21	9.84	0.03	0.00	354.71	366.48
Hale	1.71	0.20	0.18	0.29	17.83	0.02	0.11	0.00	20.32
Henry	1.80	0.26	4.18	0.28	0.00	0.54	0.00	0.00	6.52
Houston	16.77	1.37	11.57	0.34	0.00	0.17	0.00	89.30	119.35

Table 5. Total freshwater withdrawals by category of use and county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding. All values are in million gallons per day.]

WITHDRAWALS by category, in million gallons per day									
County	Public supply	Residential	Irrigation	Livestock	Aquaculture	Industrial	Mining	Thermoelectric	Total
Jackson	11.37	0.82	1.10	0.71	0.00	8.91	0.09	1,044.42	1,058.51
Jefferson	75.86	0.46	6.51	0.07	0.46	0.50	1.50	0.00	84.86
Lamar	1.60	0.27	0.18	0.10	0.00	0.11	0.00	0.00	2.15
Lauderdale	12.06	1.19	2.85	0.46	0.02	0.00	0.00	0.00	16.58
Lawrence	7.68	0.38	2.64	0.70	0.05	60.11	0.01	0.00	11.46
Lee	15.97	0.77	2.43	0.10	0.05	0.00	0.23	0.00	19.55
Limestone	10.83	0.68	5.73	0.37	0.33	0.00	1.04	2,724.37	2,743.35
Lowndes	1.13	0.06	4.18	0.57	0.03	0.00	0.46	0.00	6.43
Macon	4.09	0.20	5.01	0.11	0.00	0.00	0.60	0.00	10.01
Madison	68.41	0.78	7.43	0.29	0.00	0.73	0.45	0.00	77.36
Marengo	2.50	0.52	0.30	0.29	2.64	18.72	0.24	0.00	6.49
Marion	5.96	0.76	0.29	0.43	0.00	0.00	0.09	0.00	7.53
Marshall	26.63	0.48	2.20	1.18	0.00	0.38	0.18	0.00	30.67
Mobile	85.97	2.62	11.51	0.29	0.00	7.60	0.16	989.29	1,089.84
Monroe	2.65	0.47	0.62	0.18	0.06	46.55	0.30	0.00	4.28
Montgomery	33.34	0.34	3.46	0.59	0.33	0.05	1.44	0.00	39.50
Morgan	33.38	0.28	1.14	0.67	0.04	78.02	0.38	6.43	42.32
Perry	1.70	0.30	0.08	0.18	8.59	0.00	0.00	0.00	10.85
Pickens	2.70	0.42	0.78	0.63	1.00	0.01	0.00	0.00	5.53
Pike	5.01	0.33	1.47	0.58	0.00	0.00	0.00	0.00	7.39
Randolph	1.51	0.72	0.16	0.43	0.00	0.00	0.09	0.00	2.91
Russell	8.80	0.23	6.49	0.10	0.00	28.55	0.58	0.00	16.20
St Clair	9.93	0.41	2.10	0.10	0.00	0.00	0.61	0.00	13.15
Shelby	15.89	0.59	8.62	0.36	0.04	4.45	2.71	666.25	694.46
Sumter	1.90	0.09	0.34	0.30	3.04	2.03	1.14	0.00	6.81
Talladega	17.54	1.24	4.80	0.23	0.00	24.67	0.62	0.00	24.43
Tallapoosa	10.38	0.44	0.61	0.10	0.80	0.00	0.00	0.00	12.33
Tuscaloosa	29.92	0.82	5.09	0.20	0.04	1.78	1.09	0.00	37.16
Walker	35.75	0.44	0.71	0.28	0.03	0.00	0.49	922.15	959.85
Washington	2.07	0.56	0.11	0.19	0.03	11.03	0.11	75.54	78.61
Wilcox	2.94	0.25	0.30	0.18	0.46	18.31	0.00	0.00	4.13
Winston	0.97	0.66	0.15	0.36	0.00	0.00	0.11	0.00	2.25
Total	832.59	37.97	201.67	26.48	59.10	562.23	20.75	8,256.99	9,997.78

Table 6. Total freshwater withdrawals by category of use and hydrologic subregion and subbasin, Alabama, 2010

[Statewide, total freshwater withdrawals for self-supplied residential, aquaculture, and mining were 37.97 million gallons per day (MGD), 59.10 MGD, and 20.75 MGD, respectively. Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by category, in million gallons per day					
	Public supply	Irrigation	Livestock	Industrial	Thermoelectric	Total
APALACHICOLA						
03130002	12.39	0.54	0.18	0.00	0.00	13.11
03130003	11.08	9.37	0.36	30.12	0.00	50.93
03130004	9.88	6.63	0.31	0.44	89.30	106.56
03130012	2.61	4.77	0.15	0.00	0.00	7.53
Subtotal	35.96	21.32	1.00	30.56	89.30	178.14
CHOCTAWHATCHEE-ESCAMBIA						
03140103	1.43	1.18	0.31	0.05	0.00	2.97
03140104	0.07	0.26	0.05	0.00	0.00	0.38
03140106	3.94	14.28	0.13	0.00	0.00	18.35
03140107	6.16	4.62	0.03	0.00	0.00	10.81
03140201	20.93	8.97	1.27	1.35	0.00	32.52
03140202	6.66	4.85	1.26	1.14	0.00	13.91
03140203	0.58	0.73	0.18	0.00	0.00	1.49
03140301	7.35	2.20	0.60	0.00	1.74	11.89
03140302	1.37	0.62	0.56	0.00	0.00	2.55
03140303	2.95	1.69	0.46	0.30	0.00	5.40
03140304	3.78	1.15	0.17	35.06	0.00	40.16
03140305	2.26	0.53	0.05	0.00	0.00	2.84
Subtotal	57.48	41.08	5.07	37.90	1.74	143.27
ALABAMA						
03150105	4.50	3.28	0.71	0.00	0.00	8.49
03150106	69.45	18.07	1.48	40.06	114.66	243.72
03150107	15.97	4.44	0.52	0.00	666.25	687.18
03150108	1.02	0.77	0.63	0.00	0.00	2.42
03150109	17.10	1.19	0.51	0.00	0.00	18.80
03150110	33.48	10.04	0.40	0.00	0.00	43.92
03150201	31.34	10.44	1.19	65.86	5.83	114.66
03150202	79.90	6.60	0.38	0.16	0.00	87.04
03150203	2.89	3.03	0.68	18.31	0.00	24.91
03150204	2.41	3.83	0.04	46.55	0.00	52.83
Subtotal	258.06	61.70	6.54	170.94	786.74	1,283.97
MOBILE-TOMBIGBEE						
03160101	0.00	0.05	0.11	0.00	0.00	0.16
03160103	2.55	0.24	0.30	0.00	0.00	3.09
03160105	3.49	0.26	0.17	0.11	0.00	4.03

Table 6. Total freshwater withdrawals by category of use and hydrologic subregion and subbasin, Alabama, 2010—Continued

[Statewide, total freshwater withdrawals for self-supplied residential, aquaculture, and mining were 37.97 million gallons per day (MGD), 59.10 MGD, and 20.75 MGD, respectively. Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by category, in million gallons per day					
	Public supply	Irrigation	Livestock	Industrial	Thermoelectric	Total
MOBILE-TOMBIGBEE—Continued						
03160106	4.56	0.83	0.68	0.01	0.00	6.08
03160107	0.67	0.90	0.27	0.00	0.00	1.84
03160108	0.00	0.04	0.05	0.00	0.00	0.09
03160109	49.68	1.32	1.59	2.27	922.15	977.01
03160110	19.33	1.21	1.30	0.00	0.00	21.84
03160111	65.55	2.63	1.00	0.34	0.00	69.52
03160112	32.79	4.24	0.18	0.20	0.00	37.41
03160113	4.17	1.68	0.46	1.63	354.71	362.65
03160201	3.74	0.72	0.40	60.40	0.00	65.26
03160202	0.06	0.23	0.13	1.11	0.00	1.53
03160203	6.83	0.32	0.20	32.17	75.54	115.06
03160204	9.78	14.25	0.18	5.66	989.29	1,019.16
03160205	13.31	17.53	0.16	1.02	0.00	32.02
Subtotal	216.51	46.47	7.18	104.92	2,341.69	2,716.77
PASCAGOULA						
03170002	0.00	0.01	0.01	0.00	0.00	0.02
03170003	0.00	0.00	0.00	0.00	0.00	0.00
03170008	75.36	3.14	0.13	0.00	0.00	78.63
03170009	1.18	1.74	0.05	0.00	0.00	2.97
Subtotal	76.54	4.89	0.19	0.00	0.00	81.62
MIDDLE TENNESSEE-HIWASSEE						
06020001	0.23	0.11	0.13	0.00	0.00	0.47
Subtotal	0.23	0.11	0.13	0.00	0.00	0.47
MIDDLE TENNESSEE-ELK						
06030001	38.04	3.05	2.36	9.29	1,044.42	1,097.16
06030002	110.55	14.74	2.15	138.86	2,730.80	2,997.10
06030003	0.00	0.00	0.00	0.00	0.00	0.00
06030004	8.12	1.98	0.16	0.00	0.00	10.26
06030005	22.48	5.53	0.99	69.76	1,262.30	1,361.06
06030006	8.62	0.85	0.74	0.00	0.00	10.21
Subtotal	187.81	26.16	6.40	217.91	5,037.52	5,475.80
Total	832.59	201.72	26.51	562.23	8,256.99	9,880.04

Table 7. Total surface-water withdrawals by category of use and county, Alabama, 2010

[Values may not sum to totals because of independent rounding. All values are in million gallons per day.]

WITHDRAWALS by category, in million gallons per day								
County	Public supply	Irrigation	Livestock	Aquaculture	Industrial	Mining	Thermoelectric	Total
Autauga	0.00	1.00	0.09	0.00	31.13	0.04	5.83	38.09
Baldwin	0.00	10.44	0.19	0.16	0.00	0.00	0.00	10.79
Barbour	0.00	2.09	0.23	2.34	0.00	0.06	0.00	4.72
Bibb	0.00	0.13	0.04	1.45	0.00	0.00	0.00	1.62
Blount	52.16	0.62	0.51	0.00	0.00	0.00	0.00	53.29
Bullock	0.00	1.85	0.09	0.00	0.00	0.02	0.00	1.96
Butler	0.00	1.31	0.24	0.23	0.00	0.00	0.00	1.78
Calhoun	2.46	5.01	0.19	0.02	0.00	0.03	0.00	7.71
Chambers	4.31	0.13	0.11	0.00	0.00	0.00	0.00	4.55
Cherokee	0.96	2.39	0.17	0.00	0.00	0.00	0.00	3.52
Chilton	1.83	0.15	0.11	0.00	0.00	0.00	0.00	2.09
Choctaw	0.00	0.13	0.05	0.03	40.76	0.00	0.00	40.97
Clarke	0.90	0.13	0.05	0.03	20.22	0.00	0.00	21.33
Clay	1.66	0.08	0.17	0.01	0.00	0.00	0.00	1.92
Cleburne	0.56	0.39	0.16	0.00	0.00	0.00	0.00	1.11
Coffee	0.00	2.12	0.46	0.26	0.00	0.00	0.00	2.84
Colbert	8.22	1.76	0.16	0.00	69.54	0.73	1,262.30	1,342.71
Conecuh	0.00	0.13	0.10	0.07	0.00	0.00	0.00	0.30
Coosa	0.00	0.02	0.03	0.00	0.00	0.04	0.00	0.09
Covington	0.00	1.54	0.34	0.05	0.00	0.00	1.74	3.67
Crenshaw	0.00	0.29	0.39	0.00	0.00	0.00	0.00	0.68
Cullman	30.57	0.74	1.01	0.00	1.84	0.02	0.00	34.18
Dale	0.00	2.00	0.24	0.05	0.00	0.03	0.00	2.32
Dallas	0.00	2.45	0.18	2.14	32.19	0.12	0.00	37.08
De Kalb	6.30	1.69	1.09	0.00	0.00	0.03	0.00	9.11
Elmore	9.65	1.56	0.09	0.05	0.00	0.15	0.00	11.50
Escambia	0.00	0.66	0.08	0.01	33.66	0.00	0.00	34.41
Etowah	15.68	2.13	0.23	0.31	9.21	0.11	114.66	142.33
Fayette	1.99	0.32	0.09	0.02	0.00	1.10	0.00	3.52
Franklin	4.68	0.52	0.43	0.00	0.00	0.14	0.00	5.77
Geneva	0.00	1.63	0.45	0.03	0.00	0.03	0.00	2.14
Greene	0.00	0.04	0.13	4.13	0.00	0.00	354.71	359.01
Hale	0.00	0.13	0.16	6.06	0.00	0.00	0.00	6.35
Henry	0.00	3.17	0.17	0.00	0.00	0.00	0.00	3.34
Houston	0.00	3.57	0.20	0.00	0.00	0.00	89.30	93.07

Table 7. Total surface water withdrawals by category of use and county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding. All values are in million gallons per day.]

WITHDRAWALS by category, in million gallons per day								
County	Public supply	Irrigation	Livestock	Aquaculture	Industrial	Mining	Thermoelectric	Total
Jackson	10.70	0.93	0.39	0.00	8.91	0.03	1,044.42	1,065.38
Jefferson	67.42	6.38	0.04	0.45	0.00	0.65	0.00	74.94
Lamar	0.00	0.17	0.05	0.00	0.00	0.00	0.00	0.22
Lauderdale	10.91	1.58	0.27	0.00	0.00	0.00	0.00	12.76
Lawrence	7.68	2.45	0.40	0.00	60.11	0.00	0.00	70.64
Lee	14.87	2.25	0.06	0.03	0.00	0.07	0.00	17.28
Limestone	8.12	4.45	0.21	0.15	0.00	1.04	2,724.37	2,738.34
Lowndes	0.00	4.18	0.34	0.03	0.00	0.15	0.00	4.70
Macon	3.12	3.07	0.07	0.00	0.00	0.20	0.00	6.46
Madison	39.77	3.72	0.17	0.00	0.73	0.14	0.00	44.53
Marengo	0.00	0.29	0.18	1.19	18.52	0.08	0.00	20.26
Marion	5.26	0.13	0.25	0.00	0.00	0.06	0.00	5.70
Marshall	22.28	1.83	0.59	0.00	0.00	0.06	0.00	24.76
Mobile	70.25	2.58	0.16	0.00	0.70	0.00	989.29	1,062.98
Monroe	0.00	0.13	0.11	0.03	46.42	0.00	0.00	46.69
Montgomery	19.47	1.72	0.35	0.17	0.01	0.46	0.00	22.18
Morgan	33.38	1.00	0.37	0.02	78.02	0.12	6.43	119.34
Perry	0.00	0.02	0.10	4.01	0.00	0.00	0.00	4.13
Pickens	0.00	0.78	0.32	0.50	0.00	0.00	0.00	1.60
Pike	0.00	1.04	0.34	0.00	0.00	0.00	0.00	1.38
Randolph	1.51	0.08	0.23	0.00	0.00	0.03	0.00	1.85
Russell	7.32	6.49	0.06	0.00	27.63	0.19	0.00	41.69
St Clair	0.31	1.12	0.06	0.00	0.00	0.20	0.00	1.69
Shelby	2.63	8.62	0.21	0.04	4.45	0.00	666.25	682.20
Sumter	0.00	0.15	0.18	1.55	2.03	0.36	0.00	4.27
Talladega	8.02	4.42	0.13	0.00	24.67	0.20	0.00	37.44
Tallapoosa	10.38	0.47	0.06	0.78	0.00	0.00	0.00	11.69
Tuscaloosa	28.45	3.99	0.11	0.00	1.04	1.09	0.00	34.68
Walker	35.59	0.49	0.16	0.02	0.00	0.37	922.15	958.78
Washington	0.00	0.02	0.10	0.00	4.87	0.00	75.54	80.53
Wilcox	1.82	0.22	0.11	0.23	18.31	0.00	0.00	20.69
Winston	0.97	0.15	0.19	0.00	0.00	0.00	0.00	1.31
Total	552.16	117.27	14.80	26.65	534.97	8.15	8,256.99	9,510.99

Table 8. Total surface-water withdrawals by category of use and hydrologic subregion and subbasin, Alabama, 2010

[Statewide, total fresh surface-water withdrawals for aquaculture and mining were 26.65 million gallons per day (MGD) and 8.15 MGD respectively. Values may not sum to totals estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by category, in million gallons per day					
	Public supply	Irrigation	Livestock	Industrial	Thermoelectric	Total
APALACHICOLA						
03130002	12.39	0.37	0.11	0.00	0.00	12.87
03130003	7.32	8.60	0.22	27.63	0.00	43.77
03130004	0.00	2.80	0.19	0.00	89.30	92.29
03130012	0.00	1.30	0.09	0.00	0.00	1.39
Subtotal	19.71	13.08	0.61	27.63	89.30	150.33
CHOCTAWHATCHEE-ESCAMBIA						
03140103	0.00	0.74	0.18	0.00	0.00	0.92
03140104	0.00	0.11	0.03	0.00	0.00	0.14
03140106	0.00	2.16	0.07	0.00	0.00	2.23
03140107	0.00	1.48	0.02	0.00	0.00	1.50
03140201	0.00	6.13	0.73	0.00	0.00	6.86
03140202	0.00	3.25	0.73	0.00	0.00	3.98
03140203	0.00	0.37	0.10	0.00	0.00	0.47
03140301	0.00	1.44	0.35	0.00	1.74	3.53
03140302	0.00	0.34	0.33	0.00	0.00	0.67
03140303	0.00	1.53	0.28	0.00	0.00	1.81
03140304	0.00	0.48	0.10	33.66	0.00	34.24
03140305	0.00	0.22	0.03	0.00	0.00	0.25
Subtotal	0.00	18.25	2.95	33.66	1.74	56.60
ALABAMA						
03150105	1.96	3.20	0.40	0.00	0.00	5.56
03150106	30.89	17.48	0.83	38.33	114.66	202.19
03150107	9.66	3.31	0.30	0.00	666.25	679.52
03150108	1.02	0.31	0.35	0.00	0.00	1.68
03150109	17.10	0.89	0.29	0.00	0.00	18.28
03150110	30.70	6.85	0.24	0.00	0.00	37.79
03150201	0.00	6.22	0.71	63.33	5.83	76.09
03150202	52.39	5.95	0.22	0.00	0.00	58.56
03150203	0.00	2.59	0.41	18.31	0.00	21.31
03150204	0.00	0.63	0.02	46.42	0.00	47.07
Subtotal	143.72	47.44	3.77	166.39	786.74	1,148.05
MOBILE-TOMBIGBEE						
03160101	0.00	0.04	0.06	0.00	0.00	0.10
03160103	1.96	0.14	0.17	0.00	0.00	2.27
03160105	1.90	0.24	0.09	0.00	0.00	2.23

Table 8. Total surface-water withdrawals by category of use and hydrologic subregion and subbasin, Alabama, 2010-Continued
 [Statewide, total fresh surface-water withdrawals for aquaculture and mining were 26.65 million gallons per day (MGD) and 8.15 MGD respectively. Values may not sum to totals estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by category, in million gallons per day					
	Public supply	Irrigation	Livestock	Industrial	Thermoelectric	Total
MOBILE-TOMBIGBEE-CONTINUED						
03160106	0.00	0.67	0.36	0.00	0.00	1.03
03160107	0.00	0.68	0.15	0.00	0.00	0.83
03160108	0.00	0.01	0.03	0.00	0.00	0.04
03160109	48.91	0.77	0.81	1.84	922.15	974.48
03160110	19.33	0.92	0.66	0.00	0.00	20.91
03160111	62.88	2.31	0.52	0.00	0.00	65.71
03160112	32.18	3.60	0.10	0.00	0.00	35.88
03160113	0.00	1.22	0.26	1.04	354.71	357.23
03160201	0.00	0.55	0.24	60.20	0.00	60.99
03160202	0.00	0.15	0.08	1.11	0.00	1.34
03160203	2.72	0.04	0.11	25.09	75.54	103.50
03160204	0.00	2.78	0.10	0.70	989.29	992.87
03160205	0.00	5.15	0.09	0.00	0.00	5.24
Subtotal	169.88	19.29	3.83	89.98	2,341.69	2,624.67
PASCAGOULA						
03170002	0.00	0.00	0.01	0.00	0.00	0.01
03170003	0.00	0.00	0.00	0.00	0.00	0.00
03170008	70.25	0.61	0.07	0.00	0.00	70.93
03170009	0.00	0.36	0.03	0.00	0.00	0.39
Subtotal	70.25	0.97	0.11	0.00	0.00	71.33
MIDDLE TENNESSEE-HIWASSEE						
06020001	0.00	0.08	0.07	0.00	0.00	0.15
Subtotal	0.00	0.08	0.07	0.00	0.00	0.15
MIDDLE TENNESSEE-ELK						
06030001	32.98	2.45	1.24	8.91	1,044.42	1,090.00
06030002	78.62	9.62	1.18	138.86	2,730.80	2,959.08
06030003	0.00	0.00	0.00	0.00	0.00	0.00
06030004	8.12	1.47	0.09	0.00	0.00	9.68
06030005	21.34	4.00	0.57	69.54	1,262.30	1,357.75
06030006	7.54	0.64	0.42	0.00	0.00	8.60
Subtotal	148.60	18.19	3.50	217.31	5,037.52	5,425.12
Total	552.16	117.29	14.84	534.97	8,256.99	9,476.24

Table 9. Total groundwater withdrawals by category of use and county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	WITHDRAWALS by category, in million gallons per day								Total
	Public supply	Residential	Industrial	Thermoelectric	Mining	Livestock	Aquaculture	Irrigation	
Autauga	5.08	0.37	2.00	0.00	0.09	0.06	0.00	2.61	10.21
Baldwin	22.97	1.71	0.00	0.00	0.21	0.16	0.00	37.32	62.37
Barbour	4.15	0.15	1.57	0.00	0.13	0.15	0.09	0.57	6.81
Bibb	4.90	0.15	0.00	0.00	0.36	0.03	0.00	0.10	5.54
Blount	2.44	0.89	0.00	0.00	0.12	0.47	0.00	0.25	4.17
Bullock	2.31	0.08	0.00	0.00	0.04	0.05	0.00	1.72	4.20
Butler	2.70	0.28	0.30	0.00	0.00	0.16	0.27	0.06	3.77
Calhoun	20.84	0.51	0.96	0.00	0.07	0.13	0.00	0.00	22.51
Chambers	0.00	0.71	0.00	0.00	0.00	0.07	0.00	0.22	1.00
Cherokee	2.54	0.52	0.00	0.00	0.01	0.11	0.00	0.00	3.18
Chilton	3.05	0.74	0.35	0.00	0.01	0.07	0.00	0.53	4.75
Choctaw	1.36	0.62	0.00	0.00	0.00	0.04	0.00	0.12	2.14
Clarke	2.14	0.38	0.00	0.00	0.35	0.03	0.03	0.03	2.96
Clay	0.00	0.48	0.00	0.00	0.00	0.13	0.00	0.00	0.61
Cleburne	0.00	0.77	0.00	0.00	0.00	0.14	0.00	0.00	0.91
Coffee	7.61	0.72	2.22	0.00	0.00	0.34	0.48	0.43	11.80
Colbert	0.57	0.27	0.22	0.00	0.00	0.13	0.00	0.61	1.80
Conecuh	1.69	0.32	0.00	0.00	0.00	0.06	0.07	0.06	2.20
Coosa	0.30	0.43	0.00	0.00	0.08	0.02	0.00	0.02	0.85
Covington	4.96	0.88	0.05	0.00	0.05	0.25	0.05	0.95	7.19
Crenshaw	2.06	0.19	0.00	0.00	0.00	0.28	0.00	0.00	2.53
Cullman	0.48	0.24	0.43	0.00	0.01	1.04	0.00	0.57	2.77
Dale	6.85	0.69	0.00	0.00	0.05	0.18	0.00	0.30	8.07
Dallas	5.88	0.64	0.14	0.00	0.27	0.12	5.00	0.50	12.55
De Kalb	0.81	1.32	0.77	0.00	0.07	0.97	0.00	0.46	4.40
Elmore	3.72	0.42	0.00	0.00	0.32	0.08	0.00	0.50	5.04
Escambia	5.65	0.63	1.40	0.00	0.41	0.06	0.02	1.16	9.33
Etowah	4.67	0.31	0.00	0.00	0.24	0.19	0.00	0.13	5.54
Fayette	0.05	0.52	0.00	0.00	0.00	0.07	0.02	0.00	0.66
Franklin	1.08	0.51	0.00	0.00	0.31	0.32	0.00	0.00	2.22
Geneva	1.98	0.76	0.00	0.00	0.07	0.35	0.10	1.42	4.68
Greene	1.10	0.35	0.03	0.00	0.00	0.08	5.71	0.23	7.50
Hale	1.71	0.20	0.02	0.00	0.11	0.13	11.77	0.05	13.99
Henry	1.80	0.26	0.54	0.00	0.00	0.11	0.00	1.01	3.72
Houston	16.77	1.37	0.17	0.00	0.00	0.14	0.00	8.00	26.45

Table 9. Total groundwater withdrawals by category of use and county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding.]

County	WITHDRAWALS by category, in million gallons per day								Total
	Public supply	Residential	Industrial	Thermoelectric	Mining	Livestock	Aquaculture	Irrigation	
Jackson	0.67	0.82	0.00	0.00	0.06	0.32	0.00	0.17	2.04
Jefferson	8.44	0.46	0.50	0.00	0.85	0.03	0.01	0.13	10.42
Lamar	1.60	0.27	0.11	0.00	0.00	0.05	0.00	0.01	2.04
Lauderdale	1.15	1.19	0.00	0.00	0.00	0.19	0.02	1.27	3.82
Lawrence	0.00	0.38	0.00	0.00	0.01	0.30	0.05	0.19	0.93
Lee	1.10	0.77	0.00	0.00	0.16	0.04	0.02	0.18	2.27
Limestone	2.71	0.68	0.00	0.00	0.00	0.16	0.18	1.28	5.01
Lowndes	1.13	0.06	0.00	0.00	0.31	0.23	0.00	0.00	1.73
Macon	0.97	0.20	0.00	0.00	0.40	0.04	0.00	1.94	3.55
Madison	28.64	0.78	0.00	0.00	0.31	0.12	0.00	3.71	33.56
Marengo	2.50	0.52	0.20	0.00	0.16	0.11	1.45	0.01	4.95
Marion	0.70	0.76	0.00	0.00	0.03	0.18	0.00	0.16	1.83
Marshall	4.35	0.48	0.38	0.00	0.12	0.59	0.00	0.37	6.29
Mobile	15.72	2.62	6.90	0.00	0.16	0.13	0.00	8.93	34.46
Monroe	2.65	0.47	0.13	0.00	0.30	0.07	0.03	0.49	4.14
Montgomery	13.87	0.34	0.04	0.00	0.98	0.24	0.16	1.74	17.37
Morgan	0.00	0.28	0.00	0.00	0.26	0.30	0.02	0.14	1.00
Perry	1.70	0.30	0.00	0.00	0.00	0.08	4.58	0.06	6.72
Pickens	2.70	0.42	0.01	0.00	0.00	0.31	0.50	0.00	3.94
Pike	5.01	0.33	0.00	0.00	0.00	0.24	0.00	0.43	6.01
Randolph	0.00	0.72	0.00	0.00	0.06	0.20	0.00	0.08	1.06
Russell	1.48	0.23	0.92	0.00	0.39	0.04	0.00	0.00	3.06
St Clair	9.62	0.41	0.00	0.00	0.41	0.04	0.00	0.98	11.46
Shelby	13.26	0.59	0.00	0.00	2.71	0.15	0.00	0.00	16.71
Sumter	1.90	0.09	0.00	0.00	0.78	0.12	1.49	0.19	4.57
Talladega	9.52	1.24	0.00	0.00	0.42	0.10	0.00	0.38	11.66
Tallapoosa	0.00	0.44	0.00	0.00	0.00	0.04	0.02	0.14	0.64
Tuscaloosa	1.47	0.82	0.74	0.00	0.00	0.09	0.04	1.10	4.26
Walker	0.16	0.44	0.00	0.00	0.12	0.12	0.01	0.22	1.07
Washington	2.07	0.56	6.16	0.00	0.11	0.09	0.03	0.09	9.11
Wilcox	1.12	0.25	0.00	0.00	0.00	0.07	0.23	0.08	1.75
Winston	0.00	0.66	0.00	0.00	0.11	0.17	0.00	0.00	0.94
Total	280.43	37.97	27.26	0.00	12.60	11.68	32.45	84.40	486.79

Table 10. Total groundwater withdrawals by category of use and hydrologic subregion and subbasin, Alabama, 2010

[Statewide total fresh groundwater withdrawals for self-supplied residential, aquaculture, and mining were 37.97MGD, 32.45 MGD and 12.60 MGD respectively. Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by category, in million gallons per day					
	Public supply	Irrigation	Livestock	Industrial	Thermoelectric	Total
APALACHICOLA						
03130002	0.00	0.17	0.07	0.00	0.00	0.24
03130003	3.76	0.77	0.14	2.49	0.00	7.16
03130004	9.88	3.83	0.12	0.44	0.00	14.27
03130012	2.61	3.47	0.06	0.00	0.00	6.14
Subtotal	16.25	8.24	0.39	2.93	0.00	27.81
CHOCTAWHATCHEE-ESCAMBIA						
03140103	1.43	0.44	0.13	0.05	0.00	2.05
03140104	0.07	0.15	0.02	0.00	0.00	0.24
03140106	3.94	12.12	0.06	0.00	0.00	16.12
03140107	6.16	3.14	0.01	0.00	0.00	9.31
03140201	20.93	2.84	0.54	1.35	0.00	25.66
03140202	6.66	1.60	0.53	1.14	0.00	9.93
03140203	0.58	0.36	0.08	0.00	0.00	1.02
03140301	7.35	0.76	0.25	0.00	0.00	8.36
03140302	1.37	0.28	0.23	0.00	0.00	1.88
03140303	2.95	0.16	0.18	0.30	0.00	3.59
03140304	3.78	0.67	0.07	1.40	0.00	5.92
03140305	2.26	0.31	0.02	0.00	0.00	2.59
Subtotal	57.48	22.83	2.12	4.24	0.00	86.67
ALABAMA						
03150105	2.54	0.08	0.31	0.00	0.00	2.93
03150106	38.56	0.59	0.65	1.73	0.00	41.53
03150107	6.31	1.13	0.22	0.00	0.00	7.66
03150108	0.00	0.46	0.28	0.00	0.00	0.74
03150109	0.00	0.30	0.22	0.00	0.00	0.52
03150110	2.78	3.19	0.16	0.00	0.00	6.13
03150201	31.34	4.22	0.48	2.53	0.00	38.57
03150202	27.51	0.65	0.16	0.16	0.00	28.48
03150203	2.89	0.44	0.27	0.00	0.00	3.60
03150204	2.41	3.20	0.02	0.13	0.00	5.76
Subtotal	114.34	14.26	2.77	4.55	0.00	135.92
MOBILE-TOMBIGBEE						
03160101	0.00	0.01	0.05	0.00	0.00	0.06
03160103	0.59	0.10	0.13	0.00	0.00	0.82
03160105	1.59	0.02	0.08	0.11	0.00	1.80

Table 10. Total groundwater withdrawals by category of use and hydrologic subregion and subbasin, Alabama, 2010
— Continued

[Statewide total fresh groundwater withdrawals for self-supplied residential, aquaculture, and mining were 37.97MGD, 32.45 MGD and 12.60 MGD respectively. Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by category, in million gallons per day					
	Public supply	Irrigation	Livestock	Industrial	Thermoelectric	Total
MOBILE-TOMBIGBEE-CONTINUED						
03160106	4.56	0.16	0.32	0.01	0.00	5.05
03160107	0.67	0.22	0.12	0.00	0.00	1.01
03160108	0.00	0.03	0.02	0.00	0.00	0.05
03160109	0.77	0.55	0.78	0.43	0.00	2.53
03160110	0.00	0.29	0.64	0.00	0.00	0.93
03160111	2.67	0.32	0.48	0.34	0.00	3.81
03160112	0.61	0.64	0.08	0.20	0.00	1.53
03160113	4.17	0.46	0.20	0.59	0.00	5.42
03160201	3.74	0.17	0.16	0.20	0.00	4.27
03160202	0.06	0.08	0.05	0.00	0.00	0.19
03160203	4.11	0.28	0.09	7.08	0.00	11.56
03160204	9.78	11.47	0.08	4.96	0.00	26.29
03160205	13.31	12.38	0.07	1.02	0.00	26.78
Subtotal	46.63	27.18	3.35	14.94	0.00	92.10
PASCAGOULA						
03170002	0.00	0.01	0.00	0.00	0.00	0.01
03170003	0.00	0.00	0.00	0.00	0.00	0.00
03170008	5.11	2.53	0.06	0.00	0.00	7.70
03170009	1.18	1.38	0.02	0.00	0.00	2.58
Subtotal	6.29	3.92	0.08	0.00	0.00	10.29
MIDDLE TENNESSEE-HIWASSEE						
06020001	0.23	0.03	0.06	0.00	0.00	0.32
Subtotal	0.23	0.03	0.06	0.00	0.00	0.32
MIDDLE TENNESSEE-ELK						
06030001	5.06	0.60	1.12	0.38	0.00	7.16
06030002	31.93	5.12	0.97	0.00	0.00	38.02
06030003	0.00	0.00	0.00	0.00	0.00	0.00
06030004	0.00	0.51	0.07	0.00	0.00	0.58
06030005	1.14	1.53	0.42	0.22	0.00	3.31
06030006	1.08	0.21	0.32	0.00	0.00	1.61
Subtotal	39.21	7.97	2.90	0.60	0.00	50.68
Total	280.43	84.43	11.67	27.26	0.00	403.79



Top: Alexander City Water Department surface water treatment plant. Photo courtesy of Michael Harper, ADECA-OWR.

Middle: Birmingham Water Works Board Water Treatment plant. Photo courtesy of Tom Littlepage, ADECA-OWR.

Bottom: Alexander City Water Department surface water treatment plant. Photo courtesy of Michael Harper, ADECA-OWR.

Public Supply

Public supply refers to water that is withdrawn, treated, and distributed by public suppliers. Public suppliers provide water for a variety of uses, such as residential, commercial, industrial, thermoelectric power, and public-water use. Thermoelectric-power delivery amounts have not been estimated separately for this report but are included in the industrial/commercial deliveries.

Public-supply withdrawals, residential deliveries, and population served are listed by county in table 11 and by hydrologic subbasin in table 12. For 2010, public-supply withdrawals were 833 MGD. Public-supply withdrawals were 8 percent of total withdrawals and 48 percent of total withdrawals for all categories excluding thermoelectric power (table 5). The majority of the public-supply water (552 MGD, or 66 percent) was withdrawn from surface-water sources (figure 13). The remaining 280 MGD, or 34 percent, was withdrawn from groundwater. In 2010, about 4.24 million people, or 89 percent of the population, depended on water from public suppliers. The percentage of population served by public supply by county is shown in figure 14. The total delivery to residential customers was 328 MGD, or about 39 percent of the total withdrawals by public suppliers; combined industrial and commercial deliveries were 393 MGD, or 48 percent; and public use and losses accounted for the remaining 111 MGD, or 13 percent (figure 13). See the “Residential” and “Industrial” sections for additional details.

The geographic distribution of the total, groundwater, and surface-water withdrawals for public supply by county is shown in figure 15. Counties whose water withdrawals serve cities with large populations had the largest amounts of withdrawal. Mobile (City of Mobile), Jefferson (Birmingham), Madison (Huntsville), Blount and Walker (sources of water for metropolitan Birmingham) Counties accounted for 39 percent of the water withdrawn and 34 percent of the population served by public suppliers (figs. 15 and 16, table 11). Jefferson County had the highest percentage of population served by a public supply (99 percent) and was 1 of 20 counties whose public suppliers collectively served more than 90 percent of their respective county populations (figure 14). The largest surface-water withdrawals occurred in Mobile and Jefferson Counties (combined 162 MGD), and the largest groundwater withdrawals were in Montgomery and Baldwin Counties (combined 52 MGD).

The rank and associated cumulative percentile of total public-supply withdrawals by county are shown in figure 17. Mobile, Jefferson, Madison and Blount Counties accounted for 34 percent of the public-supply withdrawals (table 11; figs. 15 and 17). The remaining 63 counties accounted for the remaining 66 percent of the public-supply withdrawals. For comparison purposes, shading in the **choropleth map** ranges in figure 15 corresponds to shading in the cumulative percentile ranges in figure 17.

The geographic distribution of the total, groundwater, and surface-water withdrawals for public supply by hydrologic subbasin is shown in figure 18. The rank and associated cumulative percentile of total public-supply withdrawals by county are shown in figure 19. Wheeler Lake (06030002, in the Middle Tennessee–Elk subregion, City of Huntsville), Cahaba (03150202, in the Alabama subregion, metropolitan Birmingham), Escatawpa (03170008, in the Pascagoula subregion, source of water for City of Mobile), Middle Coosa (03150106, in the Alabama subregion, Cities of Talladega and Anniston), Locust (03160111, in the Mobile–Tombigbee

subregion, City of Birmingham), and the Mulberry (03160109, in the Mobile–Tombigbee subregion, Cities of Jasper and Cullman) subbasins accounted for 54 percent of the public-supply withdrawals, and the remaining 47 subbasins accounted for the other 46 percent (table 12; figs. 18 and 19). Similar to figures 15 and 17, the choropleth map shading in figure 18 corresponds to the percentile shading in figure 19.

Several sources of data were used to estimate public-supply withdrawals, deliveries, and population served. A comprehensive list of public-suppliers was compiled from

records from Alabama OWR, DWB-ADEM, ARWA, and USEPA-SDWIS. The primary sources for water withdrawals and public-supply deliveries were Alabama OWR and DWB-ADEM. Population served was estimated from the methods developed for the 2005 water use report. Details are in the “Public-Supply and Residential Water Use” and “Population Served and Self-Supplied Residential Population” sections in the “Data Compilation, Sources of Information, and Methodology” section in this report.

Figure 13. Source and distribution of public-supply water in Alabama, 2010

[MGD, million gallons per day; values may not sum to total estimated use because of rounding.]

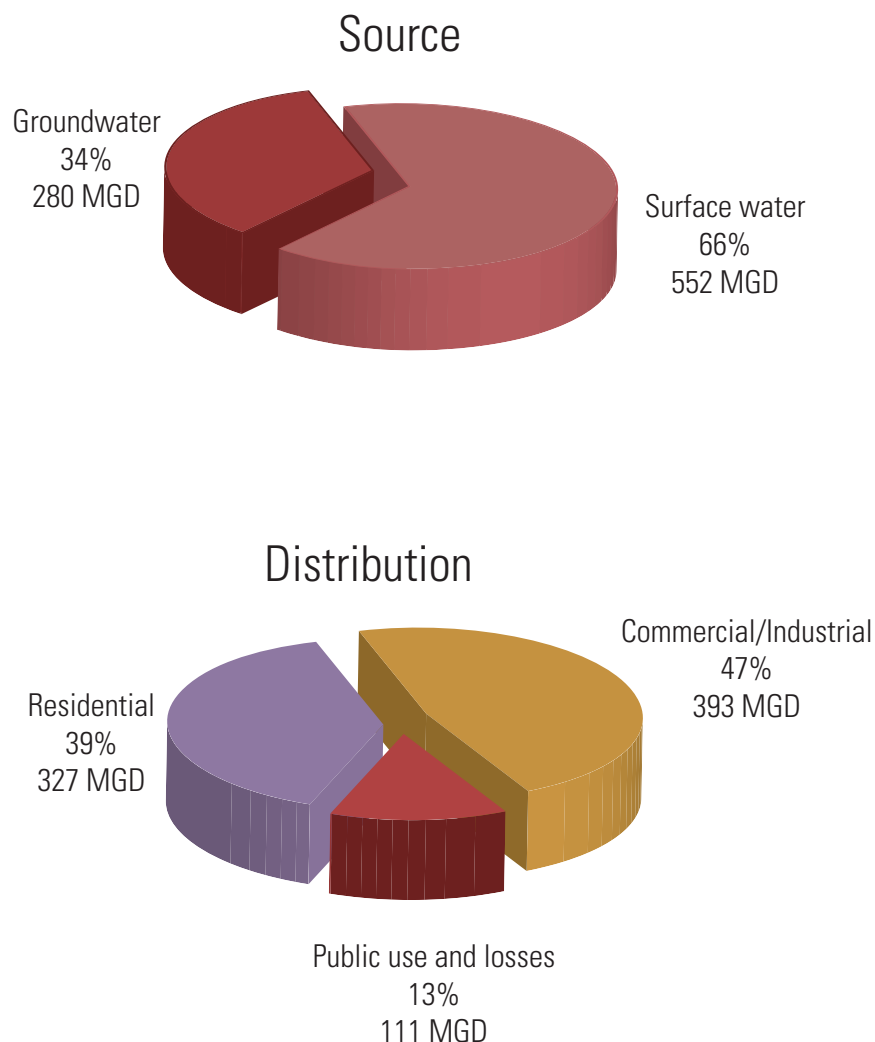


Figure 14. Percentage of population served by public suppliers in Alabama, 2010

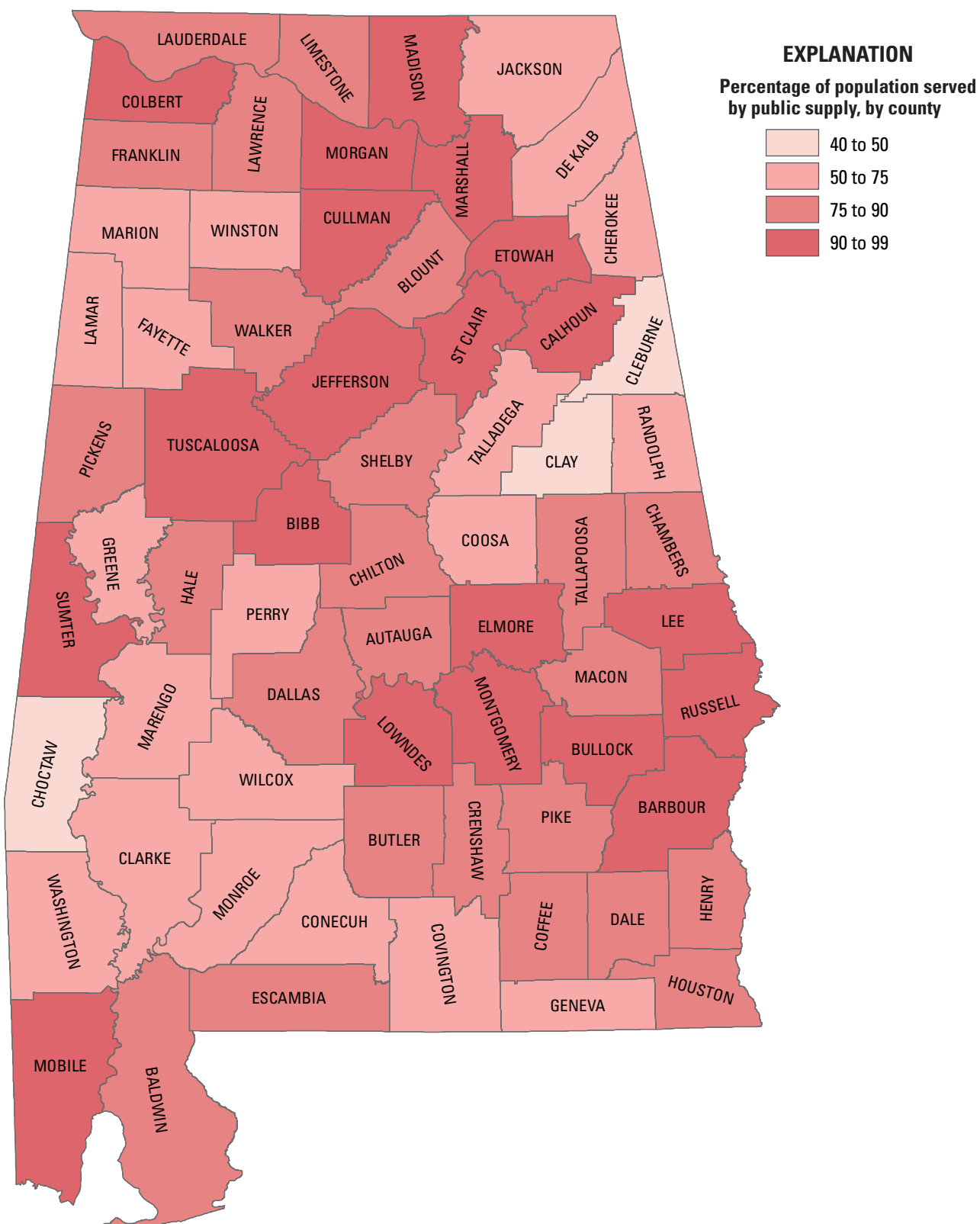


Figure 15. Public-supply withdrawals by source and county in Alabama, 2010

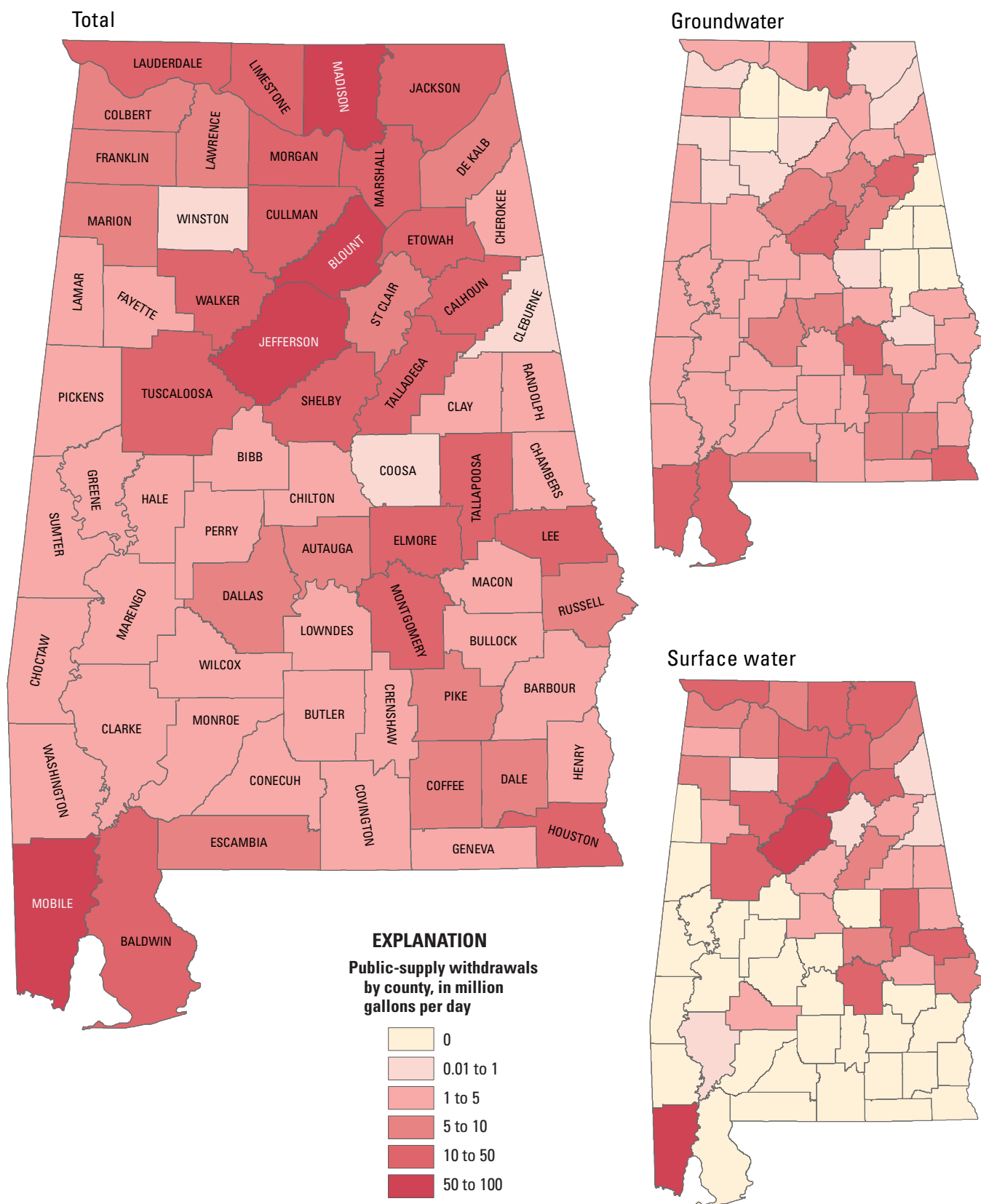


Figure 16. Alabama cities with populations of 10,000 and greater, 2010



Figure 17. Public-supply water withdrawals by rank and percentile for counties in Alabama, 2010

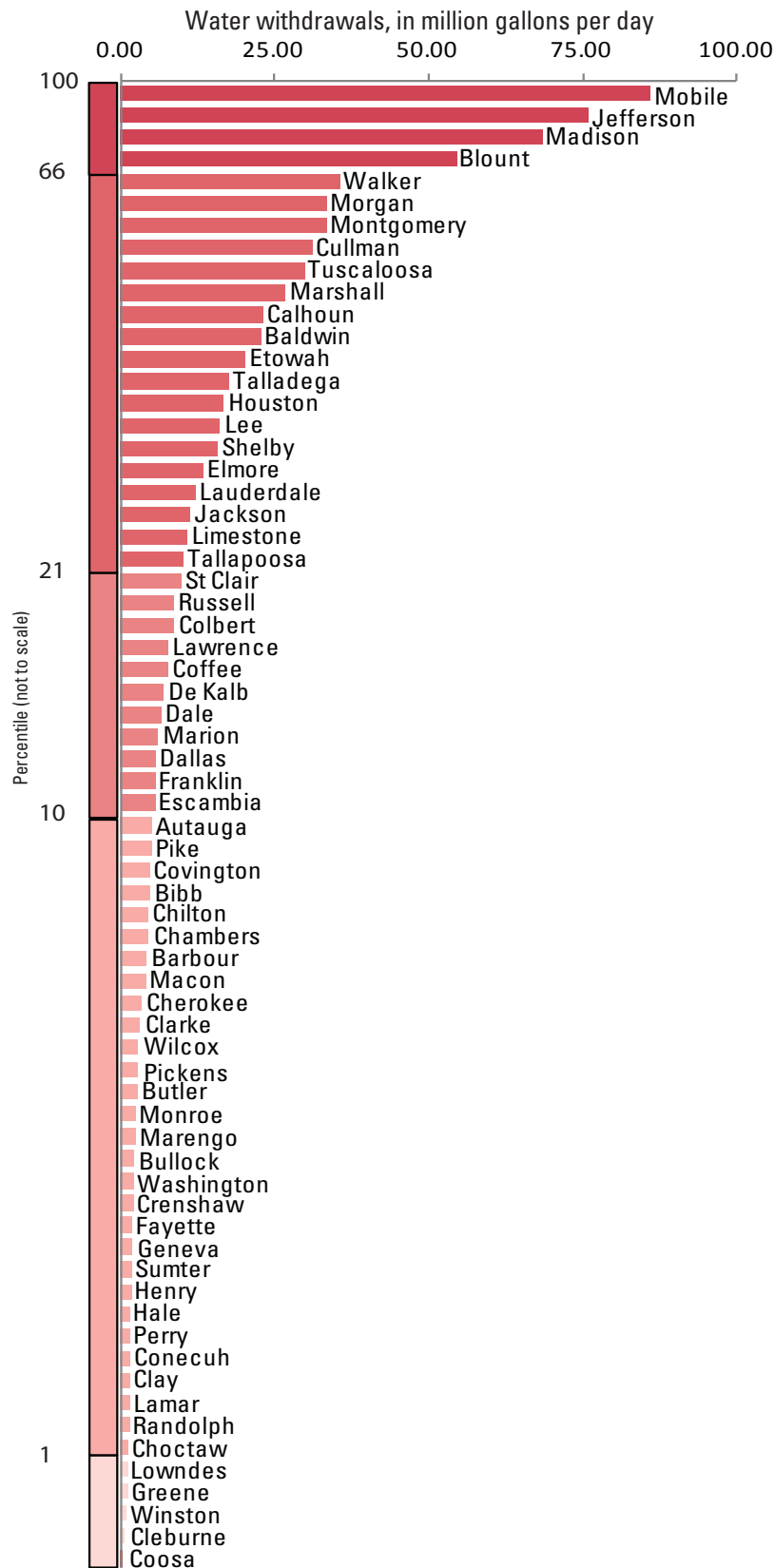


Figure 18. Public-supply withdrawals by source and hydrologic subbasin in Alabama, 2010

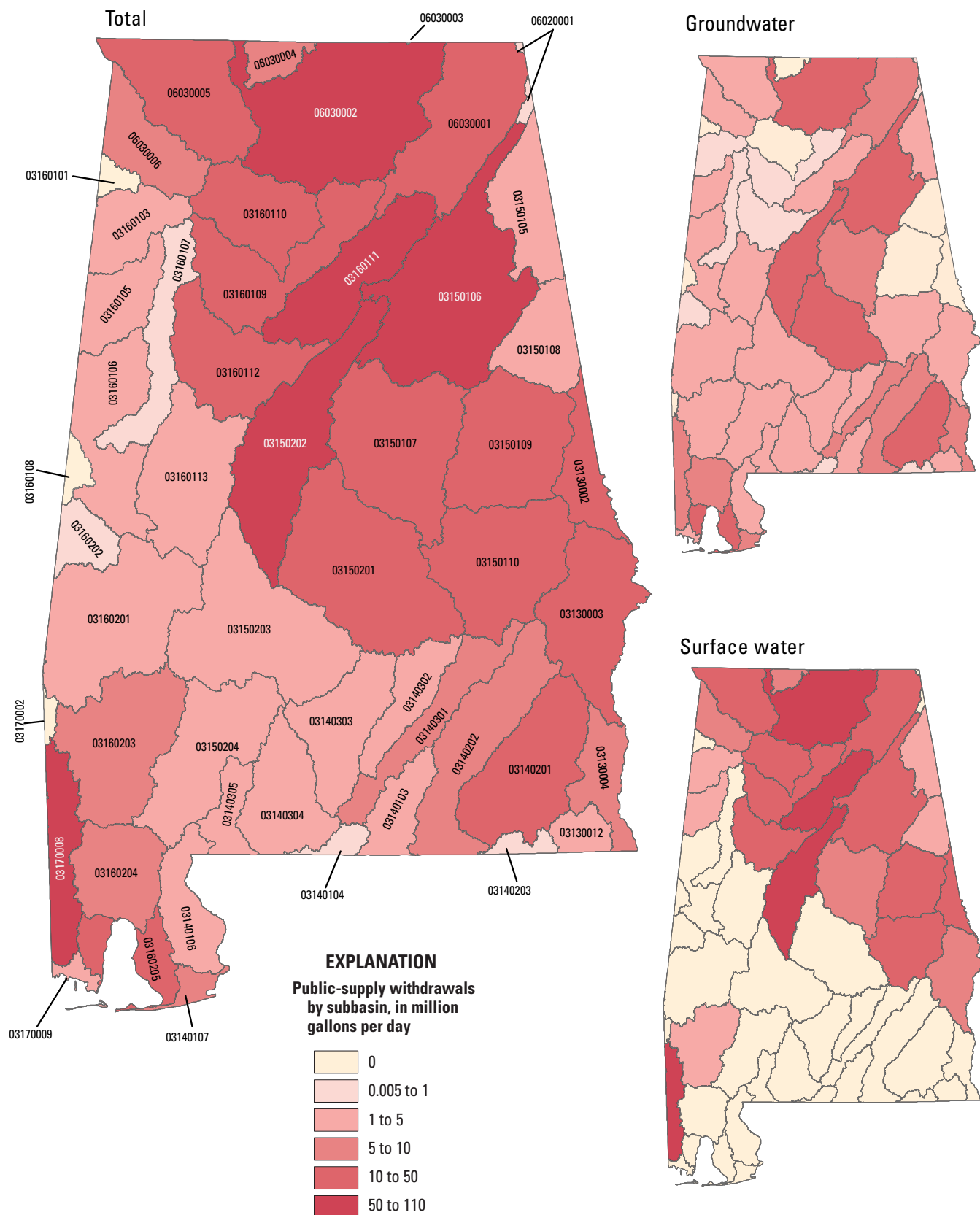


Figure 19. Public-supply water withdrawals by rank and percentile for subbasins in Alabama, 2010

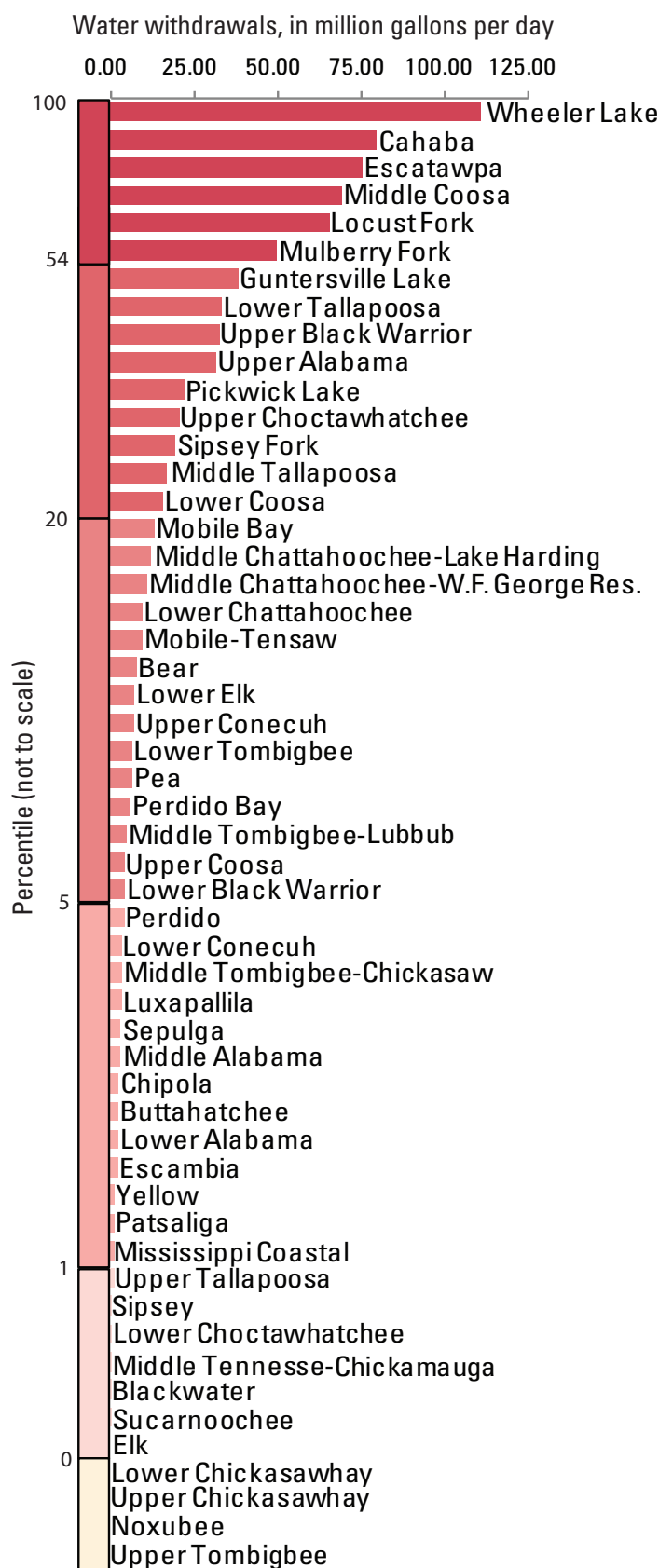


Table 11. Public-supply freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	Population	Population served by public supply		Withdrawals by source in million gallons per day		Total	Gross public supply per capita use, in gallons per day	Residential deliveries, in million gallons per day
		Total	Percentage	Groundwater	Surface water			
Autauga	54,571	48,222	88	5.08	0.00	5.08	105	3.17
Baldwin	182,265	153,463	84	22.97	0.00	22.97	150	11.95
Barbour	27,457	25,555	93	4.15	0.00	4.15	162	1.90
Bibb	22,915	21,279	93	4.90	0.00	4.90	230	1.69
Blount	57,322	44,464	78	2.44	52.16	54.60	1,228	2.99
Bullock	10,914	10,176	93	2.31	0.00	2.31	227	1.12
Butler	20,947	17,599	84	2.70	0.00	2.70	153	1.34
Calhoun	118,572	112,390	95	20.84	2.46	23.30	207	9.40
Chambers	34,215	25,875	76	0.00	4.31	4.31	167	2.11
Cherokee	25,989	17,876	69	2.54	0.96	3.50	196	1.15
Chilton	43,643	34,330	79	3.05	1.83	4.88	142	2.74
Choctaw	13,859	5,687	41	1.36	0.00	1.36	239	0.38
Clarke	25,833	18,917	73	2.14	0.90	3.04	161	1.04
Clay	13,932	6,347	46	0.00	1.66	1.66	262	0.49
Cleburne	14,972	6,567	44	0.00	0.56	0.56	85	0.60
Coffee	49,948	41,198	82	7.61	0.00	7.61	185	3.57
Colbert	54,428	50,488	93	0.57	8.22	8.79	174	3.27
Conecuh	13,228	7,544	57	1.69	0.00	1.69	224	0.48
Coosa	11,539	6,654	58	0.30	0.00	0.30	45	0.59
Covington	37,765	24,113	64	4.96	0.00	4.96	206	1.57
Crenshaw	13,906	10,559	76	2.06	0.00	2.06	195	0.69
Cullman	80,406	77,825	97	0.48	30.57	31.05	399	6.12
Dale	50,251	41,154	82	6.85	0.00	6.85	166	3.10
Dallas	43,820	34,400	79	5.88	0.00	5.88	171	2.98
De Kalb	71,109	51,744	73	0.81	6.30	7.11	137	3.29
Elmore	79,303	73,705	93	3.72	9.65	13.37	181	5.11
Escambia	38,319	31,369	82	5.65	0.00	5.65	180	2.78
Etowah	104,430	100,425	96	4.67	15.68	20.35	203	8.11
Fayette	17,241	10,225	59	0.05	1.99	2.04	200	0.75
Franklin	31,704	25,012	79	1.08	4.68	5.76	230	3.03
Geneva	26,790	15,554	58	1.98	0.00	1.98	127	1.05
Greene	9,045	6,344	70	1.10	0.00	1.10	173	0.82
Hale	15,760	12,852	82	1.71	0.00	1.71	133	0.88
Henry	17,302	13,378	77	1.80	0.00	1.80	135	1.09
Houston	101,547	81,997	81	16.77	0.00	16.77	205	5.68

Table 11. Public-supply freshwater withdrawals by county, Alabama, 2010 — Continued

[Values may not sum to totals because of independent rounding.]

County	Population	Population served by public supply		Withdrawals by source in million gallons per day		Total	Gross public supply per capita use, in gallons per day	Residential deliveries, in million gallons per day
		Total	Percentage	Groundwater	Surface water			
Jackson	53,227	39,610	74	0.67	10.70	11.37	287	2.60
Jefferson	658,466	652,418	99	8.44	67.42	75.86	116	56.28
Lamar	14,564	9,346	64	1.60	0.00	1.60	171	0.49
Lauderdale	92,709	77,930	84	1.15	10.91	12.06	155	6.11
Lawrence	34,339	28,853	84	0.00	7.68	7.68	266	3.26
Lee	140,247	130,857	93	1.10	14.87	15.97	122	12.06
Limestone	82,782	70,084	85	2.71	8.12	10.83	155	4.42
Lowndes	11,299	10,554	93	1.13	0.00	1.13	107	0.89
Macon	21,452	18,641	87	0.97	3.12	4.09	219	1.29
Madison	334,811	324,380	97	28.64	39.77	68.41	211	29.23
Marengo	21,027	12,562	60	2.50	0.00	2.50	199	0.77
Marion	30,776	20,887	68	0.70	5.26	5.96	285	1.61
Marshall	93,019	86,974	94	4.35	22.28	26.63	306	6.63
Mobile	412,992	374,671	91	15.72	70.25	85.97	229	28.08
Monroe	23,068	17,170	74	2.65	0.00	2.65	154	1.37
Montgomery	229,363	224,628	98	13.87	19.47	33.34	148	14.72
Morgan	119,490	115,469	97	0.00	33.38	33.38	289	8.63
Perry	10,591	6,371	60	1.70	0.00	1.70	267	0.47
Pickens	19,746	15,460	78	2.70	0.00	2.70	175	1.52
Pike	32,899	28,920	88	5.01	0.00	5.01	173	2.52
Randolph	22,913	12,129	53	0.00	1.51	1.51	124	0.81
Russell	52,947	48,721	92	1.48	7.32	8.80	181	2.64
St Clair	83,593	74,578	89	9.62	0.31	9.93	133	5.74
Shelby	195,085	188,237	96	13.26	2.63	15.89	84	12.69
Sumter	13,763	12,579	91	1.90	0.00	1.90	151	1.00
Talladega	82,291	61,884	75	9.52	8.02	17.54	283	4.02
Tallapoosa	41,616	35,533	85	0.00	10.38	10.38	292	2.62
Tuscaloosa	194,656	183,180	94	1.47	28.45	29.92	163	12.70
Walker	67,023	59,430	89	0.16	35.59	35.75	602	3.30
Washington	17,581	9,936	57	2.07	0.00	2.07	208	0.78
Wilcox	11,670	7,203	62	1.12	1.82	2.94	408	0.41
Winston	24,484	15,860	65	0.00	0.97	0.97	61	1.22
Total	4,779,736	4,240,341		280.43	552.16	832.59		327.87
Average			89				196	

Table 12. Public-supply freshwater withdrawals by hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	Population	WITHDRAWALS by source, in million gallons per day		
		Groundwater	Surface water	Total
APALACHICOLA				
03130002	51,634	0.00	12.39	12.39
03130003	106,825	3.76	7.32	11.08
03130004	32,219	9.88	0.00	9.88
03130012	30,787	2.61	0.00	2.61
Subtotal	221,465	16.25	19.71	35.96
CHOCTAWHATCHEE-ESCAMBIA				
03140103	19,325	1.43	0.00	1.43
03140104	1,067	0.07	0.00	0.07
03140106	34,649	3.94	0.00	3.94
03140107	29,923	6.16	0.00	6.16
03140201	160,577	20.93	0.00	20.93
03140202	54,662	6.66	0.00	6.66
03140203	6,220	0.58	0.00	0.58
03140301	25,055	7.35	0.00	7.35
03140302	14,571	1.37	0.00	1.37
03140303	23,503	2.95	0.00	2.95
03140304	27,156	3.78	0.00	3.78
03140305	18,502	2.26	0.00	2.26
Subtotal	415,210	57.48	0.00	57.48
ALABAMA				
03150105	43,691	2.54	1.96	4.50
03150106	341,077	38.56	30.89	69.45
03150107	153,230	6.31	9.66	15.97
03150108	23,758	0.00	1.02	1.02
03150109	66,269	0.00	17.10	17.10
03150110	184,292	2.78	30.70	33.48
03150201	325,522	31.34	0.00	31.34
03150202	429,425	27.51	52.39	79.90
03150203	28,484	2.89	0.00	2.89
03150204	22,236	2.41	0.00	2.41
Subtotal	1,617,984	114.34	143.72	258.06
MOBILE-TOMBIGBEE				
03160101	2,345	0.00	0.00	0.00
03160103	24,665	0.59	1.96	2.55
03160105	19,303	1.59	1.90	3.49

Table 12. Public-supply freshwater withdrawals by hydrologic subregion and subbasin, Alabama, 2010—Continued

[Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	Population	WITHDRAWALS by source, in million gallons per day		
		Groundwater	Surface water	Total
MOBILE-TOMBIGBEE-Continued				
03160106	27,337	4.56	0.00	4.56
03160107	17,293	0.67	0.00	0.67
03160108	927	0.00	0.00	0.00
03160109	131,001	0.77	48.91	49.68
03160110	52,288	0.00	19.33	19.33
03160111	318,634	2.67	62.88	65.55
03160112	280,592	0.61	32.18	32.79
03160113	108,271	4.17	0.00	4.17
03160201	33,848	3.74	0.00	3.74
03160202	6,596	0.06	0.00	0.06
03160203	36,957	4.11	2.72	6.83
03160204	187,430	9.78	0.00	9.78
03160205	257,063	13.31	0.00	13.31
Subtotal	1,504,550	46.63	169.88	216.51
PASCAGOULA				
03170002	0	0.00	0.00	0.00
03170003	0	0.00	0.00	0.00
03170008	77,148	5.11	70.25	75.36
03170009	16,260	1.18	0.00	1.18
Subtotal	93,408	6.29	70.25	76.54
MIDDLE TENNESSEE-HIWASSEE				
06020001	2,743	0.23	0.00	0.23
Subtotal	2,743	0.23	0.00	0.23
MIDDLE TENNESSEE-ELK				
06030001	147,721	5.06	32.98	38.04
06030002	569,928	31.93	78.62	110.55
06030003	0	0.00	0.00	0.00
06030004	17,220	0.00	8.12	8.12
06030005	155,370	1.14	21.34	22.48
06030006	34,137	1.08	7.54	8.62
Subtotal	924,376	39.21	148.60	187.81
Total	4,779,736	280.43	552.16	832.59

Residential



Residential well drilling rig in action, Cleburne County, AL. Photo courtesy of Michael Harper, ADECA-OWR.)

Residential water refers to the water that is used for all indoor household purposes, such as drinking, preparing food, bathing, washing clothes and dishes, flushing toilets as well as outdoor purposes, such as watering lawns and gardens. Residential water use is defined in this report as public-supplied residential deliveries plus self-supplied residential withdrawals.

Public-supplied residential deliveries and self-supplied residential water withdrawals were 366 MGD in 2010 (table 13). Public suppliers delivered 90 percent, or 328 MGD, of residential water. The remaining 38 MGD of residential water was self-supplied from groundwater. Self-supplied residential withdrawals were less than 1 percent of the total water withdrawals and 2 percent of the withdrawals for all categories except thermoelectric power (table 5). Eleven percent of the population (539,399 people) relied on private wells for their drinking water.

The geographic distribution of groundwater withdrawals for self-supplied residential use, self-supplied residential population as a percentage of the total state population, and self-supplied residential population by county is shown in figures 20 and 21, respectively. The largest aggregated self-supplied residential withdrawals were in Mobile and Baldwin Counties. These two counties represented about 11 percent of the total self-supplied residential withdrawals and 12 percent of the self-supplied residential population. Although Mobile County had the largest number of people (38,323) with private wells, that number represented only 9 percent of the population of that county. Conversely, although a much smaller population in Choctaw County relied on private wells (8,170 people), this number represented 59 percent of the county population—a much higher percentage than Mobile County.

Residential per capita use (public-supplied residential deliveries plus self-supplied residential withdrawals divided by the total population) was 75 gal/d. Public-supplied residential per capita use (public-supplied residential deliveries divided by population served) was 76 gal/d and ranged from 45 gal/d for St. Clair County to 130 gal/d for Greene County. Self-supplied residential per capita use (self-supplied residential withdrawals divided by self-supplied residential population) was 70 gal/d.

The sources of information and methodology for estimating public-supply residential deliveries, population served by public suppliers, self-supplied residential withdrawals, and self-supplied population are detailed in the “Public supply and Residential Water Use” and “Population Served and Self-Supplied Residential Population” sections in the “Data Compilation, Sources of Information, and Methodology” section of this report.

Table 13. Residential freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	Population			
	Total	Served by public supply	Self supplied	Self supplied in percent
Autauga	54,571	48,222	6,349	12
Baldwin	182,265	153,463	28,805	16
Barbour	27,457	25,555	1,900	7
Bibb	22,915	21,279	1,636	7
Blount	57,322	44,464	12,858	22
Bullock	10,914	10,176	738	7
Butler	20,947	17,599	3,351	16
Calhoun	118,572	112,390	6,182	5
Chambers	34,215	25,875	8,340	24
Cherokee	25,989	17,876	8,115	31
Chilton	43,643	34,330	9,313	21
Choctaw	13,859	5,687	8,170	59
Clarke	25,833	18,917	6,916	27
Clay	13,932	6,347	7,585	54
Cleburne	14,972	6,567	8,405	56
Coffee	49,948	41,198	8,750	18
Colbert	54,428	50,488	3,940	7
Conecuh	13,228	7,544	5,684	43
Coosa	11,539	6,654	4,888	42
Covington	37,765	24,113	13,652	36
Crenshaw	13,906	10,559	3,349	24
Cullman	80,406	77,825	2,581	3
Dale	50,251	41,154	9,097	18
Dallas	43,820	34,400	9,420	21
De Kalb	71,109	51,744	19,368	27
Elmore	79,303	73,705	5,598	7
Escambia	38,319	31,369	6,950	18
Etowah	104,430	100,425	4,005	4
Fayette	17,241	10,225	7,016	41
Franklin	31,704	25,012	6,692	21
Geneva	26,790	15,554	11,236	42
Greene	9,045	6,344	2,699	30
Hale	15,760	12,852	2,908	18
Henry	17,302	13,378	3,921	23
Houston	101,547	81,997	19,550	19

Table 13. Residential freshwater withdrawals by county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding.]

County	Population			
	Total	Served by public supply	Self supplied	Self supplied in percent
Jackson	53,227	39,610	13,617	26
Jefferson	658,466	652,418	6,048	1
Lamar	14,564	9,346	5,218	36
Lauderdale	92,709	77,930	14,779	16
Lawrence	34,339	28,853	5,483	16
Lee	140,247	130,857	9,390	7
Limestone	82,782	70,084	12,698	15
Lowndes	11,299	10,554	745	7
Macon	21,452	18,641	2,811	13
Madison	334,811	324,380	10,431	3
Marengo	21,027	12,562	8,465	40
Marion	30,776	20,887	9,889	32
Marshall	93,019	86,974	6,042	6
Mobile	412,992	374,671	38,323	9
Monroe	23,068	17,170	5,898	26
Montgomery	229,363	224,628	4,735	2
Morgan	119,490	115,469	4,021	3
Perry	10,591	6,371	4,220	40
Pickens	19,746	15,460	4,286	22
Pike	32,899	28,920	3,981	12
Randolph	22,913	12,129	10,782	47
Russell	52,947	48,721	4,226	8
St Clair	83,593	74,578	9,015	11
Shelby	195,085	188,237	6,848	4
Sumter	13,763	12,579	1,186	9
Talladega	82,291	61,884	20,407	25
Tallapoosa	41,616	35,533	6,083	15
Tuscaloosa	194,656	183,180	11,476	6
Walker	67,023	59,430	7,593	11
Washington	17,581	9,936	7,645	43
Wilcox	11,670	7,203	4,467	38
Winston	24,484	15,860	8,624	35
Total	4,779,736	4,240,342	539,399	
Percent		89%	11%	

Table 13. Residential freshwater withdrawals by county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding.]

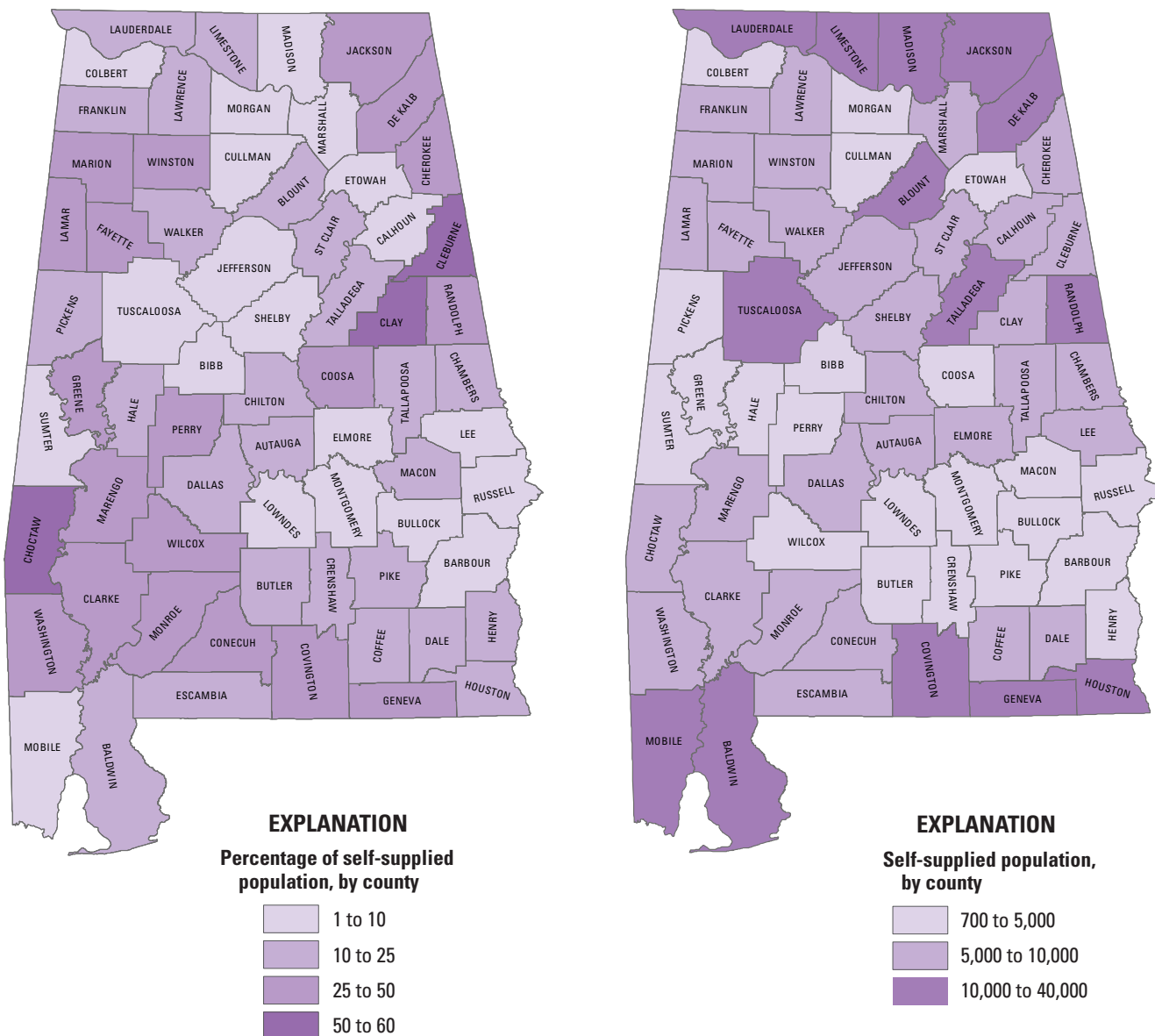
County	Residential water use, in million gallons per day			Residential per capita use, in gallons per day		
	Groundwater withdrawals	Residential deliveries	Combined	Self-supplied	Public-supplied	Combined
Autauga	0.37	3.17	3.54	58	66	65
Baldwin	1.71	11.95	13.66	59	78	75
Barbour	0.15	1.90	2.05	79	74	75
Bibb	0.15	1.69	1.84	92	79	80
Blount	0.89	2.99	3.88	69	67	68
Bullock	0.08	1.12	1.20	108	110	109
Butler	0.28	1.34	1.62	84	76	77
Calhoun	0.51	9.40	9.91	82	84	84
Chambers	0.71	2.11	2.82	85	81	82
Cherokee	0.52	1.15	1.67	64	64	64
Chilton	0.74	2.74	3.48	79	80	80
Choctaw	0.62	0.38	1.00	76	67	72
Clarke	0.38	1.04	1.42	55	55	55
Clay	0.48	0.49	0.97	63	77	69
Cleburne	0.77	0.60	1.37	92	92	92
Coffee	0.72	3.57	4.29	82	87	86
Colbert	0.27	3.27	3.54	69	65	65
Conecuh	0.32	0.48	0.80	56	64	61
Coosa	0.43	0.59	1.02	88	88	88
Covington	0.88	1.57	2.45	64	65	65
Crenshaw	0.19	0.69	0.88	57	65	63
Cullman	0.24	6.12	6.36	93	79	79
Dale	0.69	3.10	3.79	76	75	75
Dallas	0.64	2.98	3.62	68	87	83
De Kalb	1.32	3.29	4.61	68	64	65
Elmore	0.42	5.11	5.53	75	69	70
Escambia	0.63	2.78	3.41	91	89	89
Etowah	0.31	8.11	8.42	77	81	81
Fayette	0.52	0.75	1.27	74	74	74
Franklin	0.51	3.03	2.35	76	74	74
Geneva	0.76	1.05	1.81	68	68	68
Greene	0.35	0.82	1.17	130	129	129
Hale	0.2	0.88	1.08	69	69	69
Henry	0.26	1.09	1.35	66	82	78
Houston	1.37	5.68	7.05	70	69	69

Table 13. Residential freshwater withdrawals by county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding.]

County	Residential water use, in million gallons per day			Residential per capita use, in gallons per day		
	Groundwater withdrawals	Residential deliveries	Combined	Self-supplied	Public-supplied	Combined
Jackson	0.82	2.60	3.42	60	66	64
Jefferson	0.46	56.28	56.74	76	86	86
Lamar	0.27	0.49	0.76	52	52	52
Lauderdale	1.19	6.11	7.30	81	78	79
Lawrence	0.38	3.26	3.64	69	113	106
Lee	0.77	12.06	12.83	82	92	91
Limestone	0.68	4.42	5.10	54	63	62
Lowndes	0.06	0.89	0.95	81	84	84
Macon	0.2	1.29	1.49	71	69	69
Madison	0.78	29.23	30.01	75	90	90
Marengo	0.52	0.77	1.29	61	61	61
Marion	0.76	1.61	2.37	77	77	77
Marshall	0.48	6.63	7.11	79	76	76
Mobile	2.62	28.08	30.70	68	75	74
Monroe	0.47	1.37	1.84	80	80	80
Montgomery	0.34	14.72	15.06	72	66	66
Morgan	0.28	8.63	8.91	70	75	75
Perry	0.3	0.47	0.77	71	73	73
Pickens	0.42	1.52	1.94	98	99	98
Pike	0.33	2.52	2.85	83	87	87
Randolph	0.72	0.81	1.53	67	67	67
Russell	0.23	2.64	2.87	54	54	54
St Clair	0.41	5.74	6.15	45	77	74
Shelby	0.59	12.69	13.28	86	67	68
Sumter	0.09	1.00	1.09	76	79	79
Talladega	1.24	4.02	5.26	61	65	64
Tallapoosa	0.44	2.62	3.06	72	74	73
Tuscaloosa	0.82	12.70	13.52	71	69	69
Walker	0.44	3.30	3.74	58	56	56
Washington	0.56	0.78	1.34	73	79	76
Wilcox	0.25	0.41	0.66	56	57	56
Winston	0.66	1.22	1.88	77	77	77
Total	37.97	327.87	364.65			
Average				70	77	75

Figure 21. Self-supplied residential population as a percentage of total population and self-supplied residential population by county in Alabama, 2010





Top: Sprinkler irrigation of a sod farm in Baldwin County. Photo courtesy of Tom Littlepage, ADECA-OWR

Bottom: Sprinkler irrigation of nursery plants at Flowerwood Nursery in Cleburne County, AL. Photo courtesy of Michael Harper, ADECA-OWR

Irrigation

Irrigation water refers to water that is applied by an irrigation system to assist in the growing of crops and pastures or to maintain vegetative growth in recreational lands such as parks and golf courses. Irrigation includes water that is applied for pre-irrigation, frost protection, chemical application, weed control, field preparation, crop cooling, harvesting, dust suppression, the leaching of salts from the root zone, and water lost in conveyance. **Conveyance loss** was not reported for 2010. Although annual water-use data are expressed in terms of million gallons per day, irrigation water is applied, generally, only during part of each year and at variable rates; therefore, the actual rate of application during the growing season would be more than the daily rate expressed as million gallons per day.

Irrigation withdrawals and irrigated acres by irrigation system by county and subbasin are shown, respectively in tables 14 and 15. For 2010, total withdrawals were 202 MGD. Irrigation withdrawals were 2 percent of total withdrawals and 12 percent of total withdrawals for all categories excluding thermoelectric power (table 5). Of the total irrigation withdrawals, 58 percent, or 117 MGD, was from surface water, and the remaining 42 percent, or 84 MGD, was from groundwater (figure 22). Consumptive use was estimated to be 100 percent. Approximately 169,240 acres were irrigated in 2010. Average application rates were calculated by dividing total irrigation withdrawals—determined separately for crops (row crops, nursery stock, and sod) and golf courses—for each county by the number of acres. The statewide average application rate was 1.34 acre-feet per acre per year. The highest application rate was for nursery stock, 3.74 acre-feet per acre per year.

The geographic distribution of total, groundwater, and surface-water withdrawals for irrigation by county and by hydrologic subbasin is shown respectively in figures 23 and 24. Forty percent of the counties (27 counties) withdrew less than 1 MGD for irrigation. Baldwin County withdrew 24 percent (48 MGD) of total irrigation water and most of the water (37 MGD) was from groundwater sources (table 14). The top eleven counties (totaling 121 MGD) each withdrew more than 5 MGD, and as a group, withdrew 60 percent of the irrigation total for the State. The Middle Coosa subbasin (03150106, in the Alabama subregion), withdrew the most water for irrigation—9 percent of the total. The top seven subbasins, each withdrew 10.0 MGD or more, accounted for roughly 49 percent of the estimated withdrawals (table 15).

About 14 percent (23,680 acres) of the total irrigated acreage (169,240 acres) and about 15 percent of total crop irrigated acreage (21,540 acres of the 142,300 acres) were in Baldwin (primarily nursery stock and sod), Houston (primarily cotton, peanuts, and vegetables), Limestone (primarily corn and cotton), and Geneva (primarily corn and peanuts) Counties (U.S. Department of Agriculture, National Agricultural Statistics Service, 2009; table 10). Twenty eight of the counties statewide irrigated 1000 acres or less. The range in acreage was from 80 acres in Coosa County to 24,020 acres in Baldwin County.

Nursery stock and sod are important to the agricultural economy of the State and were the top commodities for cash receipts for crops (U.S. Department of Agriculture, National Agricultural Statistics Service, 2009). Nursery stock and sod accounted for nearly 21 percent (29,464 acres) of the crop acreage statewide. Approximately 39 percent of the total nursery stock and sod acreage was in Baldwin County. In comparison to most crops in the state, all of the commercial nursery, sod, and golf course acreages were irrigated; these businesses were located in nearly every county in Alabama.

Golf courses applied an estimated 41 MGD to 26,900 acres in 2010 (table 16). For this study, it was assumed that all golf course irrigation was from surface water and that the water was applied by sprinkler systems. Golf courses were classified as Tier 1, 2, or 3 (table 2) depending on a number of factors such as turf and landscape watering practices, which, are in turn, guided by the season of the year, antecedent soil moisture, weather conditions, and operational costs. Tier 1 golf courses water more extensively than Tier 2 and Tier 3 courses. The effect of precipitation on watering practices in 2010 is shown in figure 25. A composite of average monthly watering by tier is compared to statewide average rainfall amounts expressed as departure from normal in inches for 2010 (National Oceanic and Atmospheric Administration, 2014). Statewide average rainfall for 2010 was about 49

inches about 5 inches—below the normal rainfall of 54 inches per year.

While a significant amount of irrigation withdrawal data is reported to the OWR AWURP, there are some limitations in the annually reported data such as irrigated acreage, crop type, irrigation system type, application rates, etc. Therefore, irrigation withdrawal information was supplemented from ancillary data, such as crop type, state or regional crop application coefficients, and irrigated acreage. The sources for these ancillary data were an OWR golf course survey, Alabama Department of Agriculture and Industries (AGI) listing of 2010 certified nursery growers and nursery dealers, and the U.S. Department of Agriculture, National Agricultural Statistics Service Census of Agriculture (2007).

Figure 22. Source and distribution of water for irrigation use in Alabama, 2010

[MGD, million gallons per day; values may not sum to total estimated use because of rounding.]

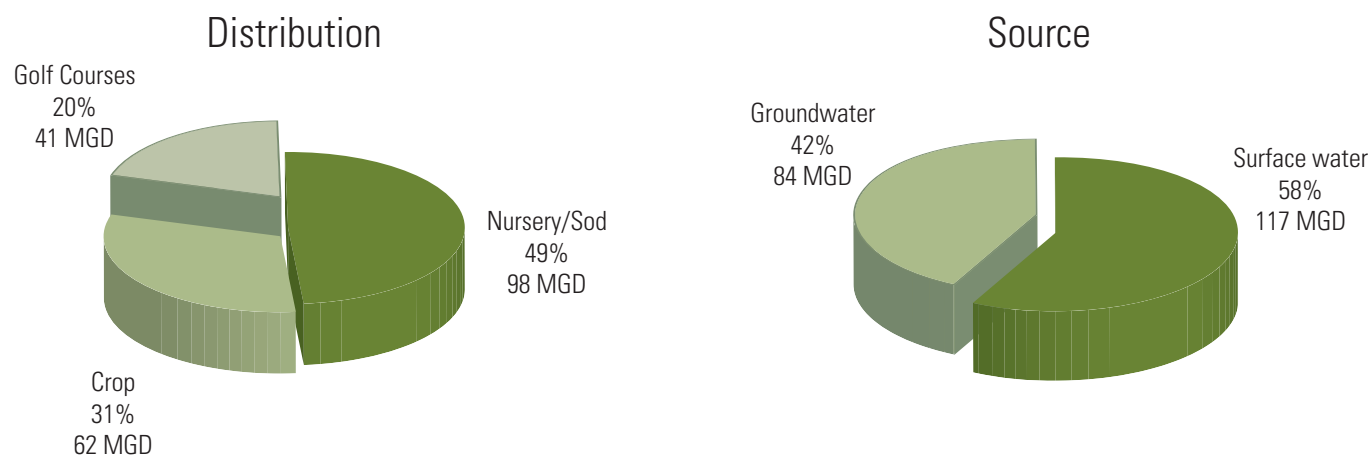


Figure 23. Irrigation withdrawals by source and county in Alabama, 2010

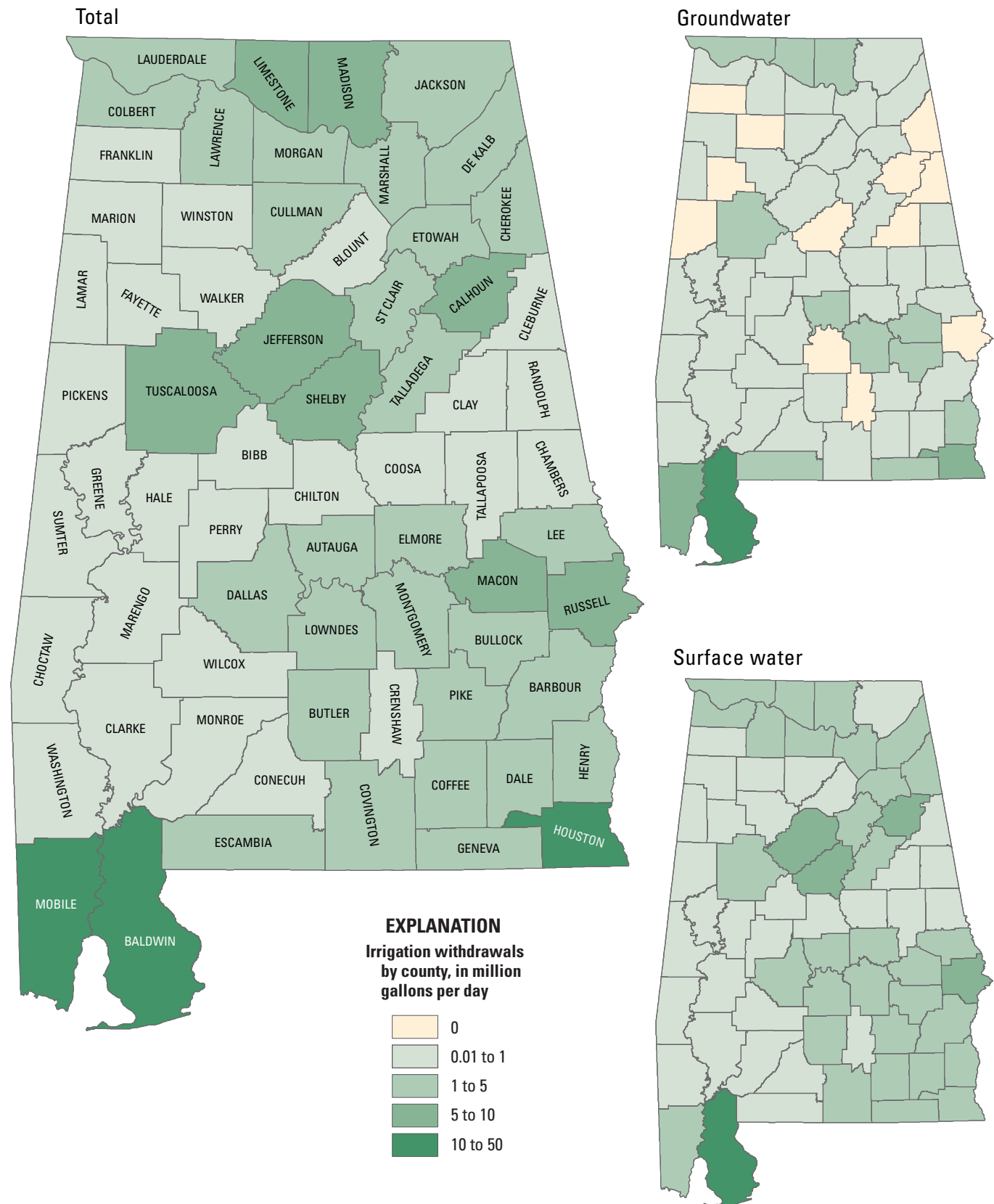


Figure 24. Irrigation withdrawals by source and subbasin in Alabama, 2010

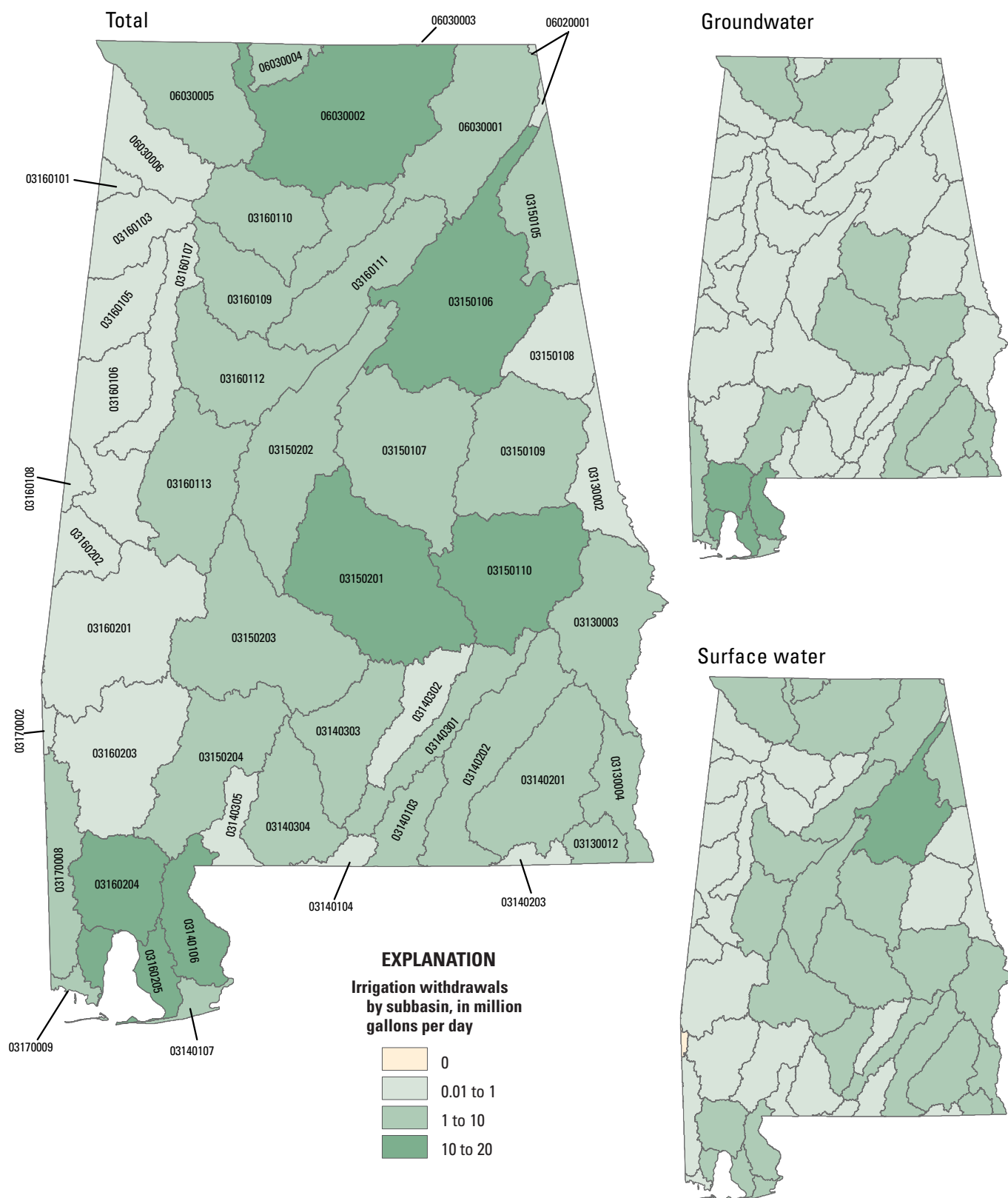


Figure 25. Comparison of seasonal water use by golf course type in Alabama, 2010

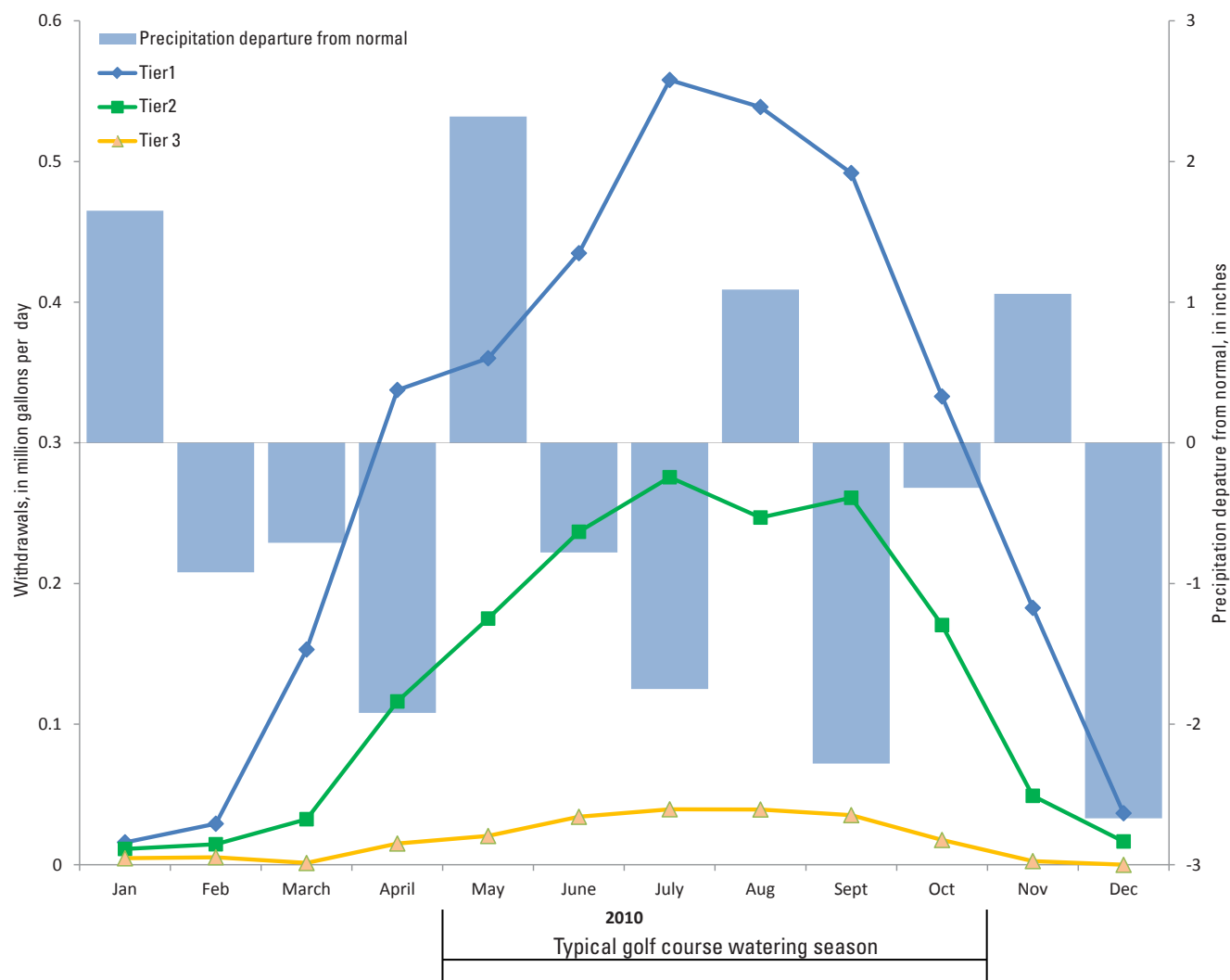


Table 14. Irrigation freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	IRRIGATED LAND in thousand acres	WITHDRAWALS by source in million gallons per day			Application rate, (in acre-feet per acre)
	Total	Groundwater	Surface water	Total	
Autauga	2.16	2.61	1.00	3.61	1.87
Baldwin	24.02	37.32	10.44	47.76	2.23
Barbour	3.25	0.57	2.09	2.66	0.92
Bibb	0.27	0.10	0.13	0.23	0.97
Blount	0.88	0.25	0.62	0.87	1.11
Bullock	1.88	1.72	1.85	3.57	2.13
Butler	0.57	0.06	1.31	1.37	2.72
Calhoun	3.32	0.00	5.01	5.01	1.69
Chambers	0.47	0.22	0.13	0.35	0.84
Cherokee	1.78	0.00	2.39	2.39	1.51
Chilton	0.86	0.53	0.15	0.68	0.89
Choctaw	0.44	0.12	0.13	0.25	0.65
Clarke	0.16	0.03	0.13	0.16	1.15
Clay	0.11	0.00	0.08	0.08	0.83
Cleburne	0.51	0.00	0.39	0.39	0.86
Coffee	4.50	0.43	2.12	2.55	0.64
Colbert	3.01	0.61	1.76	2.37	0.89
Conecuh	0.23	0.06	0.13	0.19	0.95
Coosa	0.08	0.02	0.02	0.04	0.57
Covington	2.02	0.95	1.54	2.49	1.38
Crenshaw	0.67	0.00	0.29	0.29	0.49
Cullman	1.21	0.57	0.74	1.31	1.21
Dale	3.31	0.30	2.00	2.30	0.78
Dallas	3.58	0.50	2.45	2.95	0.92
De Kalb	1.70	0.46	1.69	2.15	1.42
Elmore	2.56	0.50	1.56	2.06	0.90
Escambia	2.31	1.16	0.66	1.82	0.88
Etowah	1.54	0.13	2.13	2.26	1.65
Fayette	0.49	0.00	0.32	0.32	0.74
Franklin	0.44	0.00	0.52	0.52	1.35
Geneva	3.44	1.42	1.63	3.05	0.99
Greene	0.32	0.23	0.04	0.27	0.95
Hale	0.19	0.05	0.13	0.18	1.09
Henry	5.48	1.01	3.17	4.18	0.86
Houston	14.13	8.00	3.57	11.57	0.92

Table 14. Irrigation freshwater withdrawals by county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding.]

County	IRRIGATED LAND in thousand acres	WITHDRAWALS by source in million gallons per day			Application rate, (in acre-feet per acre)
	Total	Groundwater	Surface water	Total	
Jackson	1.27	0.17	0.93	1.10	0.97
Jefferson	3.91	0.13	6.38	6.51	1.87
Lamar	0.20	0.01	0.17	0.18	1.03
Lauderdale	2.08	1.27	1.58	2.85	1.53
Lawrence	4.34	0.19	2.45	2.64	0.68
Lee	1.67	0.18	2.25	2.43	1.63
Limestone	8.16	1.28	4.45	5.73	0.79
Lowndes	3.95	0.00	4.18	4.18	1.19
Macon	3.66	1.94	3.07	5.01	1.53
Madison	8.47	3.71	3.72	7.43	0.98
Marengo	0.27	0.01	0.29	0.30	1.25
Marion	0.42	0.16	0.13	0.29	0.78
Marshall	2.35	0.37	1.83	2.20	1.05
Mobile	7.02	8.93	2.58	11.51	1.84
Monroe	0.91	0.49	0.13	0.62	0.77
Montgomery	2.23	1.74	1.72	3.46	1.74
Morgan	1.01	0.14	1.00	1.14	1.27
Perry	0.20	0.06	0.02	0.08	0.45
Pickens	0.80	0.00	0.78	0.78	1.10
Pike	2.68	0.43	1.04	1.47	0.61
Randolph	0.28	0.08	0.08	0.16	0.64
Russell	4.23	0.00	6.49	6.49	1.72
St Clair	2.35	0.98	1.12	2.10	1.00
Shelby	4.59	0.00	8.62	8.62	2.10
Sumter	0.63	0.19	0.15	0.34	0.61
Talladega	4.58	0.38	4.42	4.80	1.18
Tallapoosa	0.62	0.14	0.47	0.61	1.10
Tuscaloosa	2.95	1.10	3.99	5.09	1.94
Walker	1.04	0.22	0.49	0.71	0.77
Washington	0.17	0.09	0.02	0.11	0.73
Wilcox	0.29	0.08	0.22	0.30	1.17
Winston	0.14	0.00	0.15	0.15	1.23
Total	169.24	84.40	117.27	201.67	
Average					1.34

Table 15. Irrigation freshwater withdrawals by hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	Withdrawals by source in million gallons per day			Hydrologic subregion and subbasin	Withdrawals by source in million gallons per day		
	Groundwater	Surface water	Total		Groundwater	Surface water	Total
APALACHICOLA				03160106	0.16	0.67	0.83
03130002	0.17	0.37	0.54	03160107	0.22	0.68	0.90
03130003	0.77	8.60	9.37	03160108	0.03	0.01	0.04
03130004	3.83	2.80	6.63	03160109	0.55	0.77	1.32
03130012	3.47	1.30	4.77	03160110	0.29	0.92	1.21
<i>Subtotal</i>	<i>8.24</i>	<i>13.08</i>	<i>21.32</i>	03160111	0.32	2.31	2.63
CHOCTAWHATCHEE-ESCAMBIA				03160112	0.64	3.60	4.24
03140103	0.44	0.74	1.18	03160113	0.46	1.22	1.68
03140104	0.15	0.11	0.26	03160201	0.17	0.55	0.72
03140106	12.12	2.16	14.28	03160202	0.08	0.15	0.23
03140107	3.14	1.48	4.62	03160203	0.28	0.04	0.32
03140201	2.84	6.13	8.97	03160204	11.47	2.78	14.25
03140202	1.60	3.25	4.85	03160205	12.38	5.15	17.53
03140203	0.36	0.37	0.73	<i>Subtotal</i>	<i>27.18</i>	<i>19.29</i>	<i>46.47</i>
03140301	0.76	1.44	2.20	PASCAGOULA			
03140302	0.28	0.34	0.62	03170002	0.01	0.00	0.01
03140303	0.16	1.53	1.69	03170003	0.00	0.00	0.00
03140304	0.67	0.48	1.15	03170008	2.53	0.61	3.14
03140305	0.31	0.22	0.53	03170009	1.38	0.36	1.74
<i>Subtotal</i>	<i>22.83</i>	<i>18.25</i>	<i>41.08</i>	<i>Subtotal</i>	<i>3.92</i>	<i>0.97</i>	<i>4.89</i>
ALABAMA				MIDDLE TENNESSEE-HIWASSEE			
03150105	0.08	3.20	3.28	06020001	0.03	0.08	0.11
03150106	0.59	17.48	18.07	<i>Subtotal</i>	<i>0.03</i>	<i>0.08</i>	<i>0.11</i>
03150107	1.13	3.31	4.44	MIDDLE TENNESSEE-ELK			
03150108	0.46	0.31	0.77	06030001	0.60	2.45	3.05
03150109	0.30	0.89	1.19	06030002	5.12	9.62	14.74
03150110	3.19	6.85	10.04	06030003	0.00	0.00	0.00
03150201	4.22	6.22	10.44	06030004	0.51	1.47	1.98
03150202	0.65	5.95	6.60	06030005	1.53	4.00	5.53
03150203	0.44	2.59	3.03	06030006	0.21	0.64	0.85
03150204	3.20	0.63	3.83	<i>Subtotal</i>	<i>7.97</i>	<i>18.19</i>	<i>26.16</i>
<i>Subtotal</i>	<i>14.26</i>	<i>47.44</i>	<i>61.70</i>	Total	84.43	117.29	201.72
MOBILE-TOMBIGBEE							
03160101	0.01	0.04	0.05				
03160103	0.10	0.14	0.24				
03160105	0.02	0.24	0.26				

Table 16. Crop and golf course irrigated land and freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding; Golf course withdrawals are only from surface-water sources.]

County	CROP				GOLF COURSE	
	Irrigated land in thousand acres	Withdrawals by source, in million gallons per day		Total	Irrigated land, in thousand acres Applied by sprinkler irrigation system	Withdrawals, (in million gallons per day) Surface water
		Groundwater	Surface water			
Autauga	1.73	2.61	0.00	2.61	0.43	1.00
Baldwin	21.54	37.32	5.73	43.05	2.48	4.71
Barbour	2.95	0.57	1.69	2.26	0.30	0.40
Bibb	0.17	0.10	0.00	0.10	0.10	0.13
Blount	0.58	0.25	0.22	0.47	0.30	0.40
Bullock	1.78	1.72	1.72	3.44	0.10	0.13
Butler	0.08	0.06	0.02	0.08	0.49	1.29
Calhoun	2.60	0.00	4.01	4.01	0.72	1.00
Chambers	0.37	0.22	0.00	0.22	0.10	0.13
Cherokee	1.68	0.00	2.26	2.26	0.10	0.13
Chilton	0.70	0.53	0.00	0.53	0.16	0.15
Choctaw	0.34	0.12	0.00	0.12	0.10	0.13
Clarke	0.06	0.03	0.00	0.03	0.10	0.13
Clay	0.05	0.00	0.06	0.06	0.06	0.02
Cleburne	0.51	0.00	0.39	0.39	0.00	0.00
Coffee	4.20	0.43	1.72	2.15	0.30	0.40
Colbert	2.42	0.61	0.61	1.22	0.59	1.15
Conecuh	0.13	0.06	0.00	0.06	0.10	0.13
Coosa	0.02	0.02	0.00	0.02	0.06	0.02
Covington	1.76	0.95	1.25	2.20	0.26	0.29
Crenshaw	0.67	0.00	0.29	0.29	0.00	0.00
Cullman	1.00	0.57	0.57	1.14	0.21	0.17
Dale	2.61	0.30	1.06	1.36	0.70	0.94
Dallas	3.32	0.50	2.16	2.66	0.26	0.29
DeKalb	1.39	0.46	1.39	1.85	0.31	0.30
Elmore	2.20	0.50	1.14	1.64	0.36	0.42
Escambia	2.11	1.16	0.39	1.55	0.20	0.27
Etowah	0.63	0.13	0.25	0.38	0.91	1.88
Fayette	0.39	0.00	0.19	0.19	0.10	0.13
Franklin	0.28	0.00	0.37	0.37	0.16	0.15
Geneva	3.38	1.42	1.61	3.03	0.06	0.02
Greene	0.32	0.23	0.04	0.27	0.00	0.00
Hale	0.09	0.05	0.00	0.05	0.10	0.13
Henry	5.38	1.01	3.04	4.05	0.10	0.13
Houston	13.39	8.00	1.99	9.99	0.74	1.58

Table 16. Crop and golf course irrigated land and freshwater withdrawals by county, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding; Golf course withdrawals are only from surface-water sources.]

County	CROP				GOLF COURSE	
	Irrigated land in thousand acres	Withdrawals by source, in million gallons per day			Irrigated land, in thousand acres Applied by sprinkler irrigation system	Withdrawals, (in million gallons per day) Surface water
		Groundwater	Surface water	Total		
Jackson	0.76	0.17	0.36	0.53	0.51	0.57
Jefferson	0.28	0.13	0.16	0.29	3.63	6.22
Lamar	0.10	0.01	0.04	0.05	0.10	0.13
Lauderdale	1.56	1.27	0.85	2.12	0.52	0.73
Lawrence	4.18	0.19	2.30	2.49	0.16	0.15
Lee	0.94	0.18	0.83	1.01	0.73	1.42
Limestone	7.75	1.28	4.01	5.29	0.41	0.44
Lowndes	3.95	0.00	4.18	4.18	0.00	0.00
Macon	3.66	1.94	3.07	5.01	0.00	0.00
Madison	6.94	3.71	1.23	4.94	1.53	2.49
Marengo	0.01	0.01	0.00	0.01	0.26	0.29
Marion	0.32	0.16	0.00	0.16	0.10	0.13
Marshall	1.35	0.37	0.49	0.86	1.00	1.34
Mobile	5.78	8.93	0.59	9.52	1.24	1.99
Monroe	0.81	0.49	0.00	0.49	0.10	0.13
Montgomery	1.15	1.74	0.30	2.04	1.08	1.42
Morgan	0.41	0.14	0.20	0.34	0.60	0.80
Perry	0.14	0.06	0.00	0.06	0.06	0.02
Pickens	0.70	0.00	0.65	0.65	0.10	0.13
Pike	2.42	0.43	0.75	1.18	0.26	0.29
Randolph	0.22	0.08	0.06	0.14	0.06	0.02
Russell	3.97	0.00	6.20	6.20	0.26	0.29
St. Clair	2.15	0.98	0.85	1.83	0.20	0.27
Shelby	4.19	0.00	8.08	8.08	0.40	0.54
Sumter	0.47	0.19	0.00	0.19	0.16	0.15
Talladega	3.87	0.38	3.33	3.71	0.71	1.09
Tallapoosa	0.42	0.14	0.20	0.34	0.20	0.27
Tuscaloosa	2.17	1.10	2.72	3.82	0.78	1.27
Walker	0.46	0.22	0.00	0.22	0.58	0.49
Washington	0.11	0.09	0.00	0.09	0.06	0.02
Wilcox	0.23	0.08	0.20	0.28	0.06	0.02
Winston	0.04	0.00	0.02	0.02	0.10	0.13
Total	142.34	84.40	75.84	160.24	26.90	41.43



Chickens drinking water.
Photo courtesy of Michael Harper, ADECA-OWR

Livestock

Livestock water is water associated with livestock watering, feedlots, dairy operations, and other on-farm needs. The associated activities include cooling of the facilities for animals and products, dairy sanitation and cleaning of facilities, animal waste-disposal systems, and incidental water loss. The primary livestock types in Alabama include poultry, beef cattle and calves, dairy cows and heifers, hogs and pigs, and horses and ponies. For 2010, all withdrawals were considered to be freshwater. The livestock category excludes on-farm residential use (residential category) and irrigation water use.

During 2010, livestock withdrawals were 27 MGD (tables 17 and 18). Surface water was the source for 56 percent (15 MGD) of the livestock withdrawals, and groundwater was the source for the remaining 44 percent (12 MGD) (figure 26). Livestock withdrawals were less than 1 percent of total withdrawals and were 2 percent of total withdrawals excluding thermo-electric power (table 5).

The geographic distribution of total, groundwater, and surface-water withdrawals by county and by hydrologic subbasin is shown in figures 27 and 28. The counties with large water withdrawals for livestock mostly corresponded to the areas of Alabama with major producers of broilers, cattle and calves, and hogs and pigs (U.S. Department of Agriculture, National Agricultural Statistics Service, 2009). Blount, Cullman, DeKalb, and Marshall Counties, the top four broiler chicken producers in Alabama, accounted for about 24 percent of the total livestock water withdrawals (U.S. Department of Agriculture, National Agricultural Statistics Service, 2009).

Nine of the hydrologic subbasins withdrew 1 MGD or more and collectively accounted for 51 percent (14 MGD) of the total livestock withdrawals. The largest withdrawals by subregion occurred in the Mobile–Tombigbee (27 percent, or 7.2 MGD), Alabama (25 percent, or 6.5 MGD), and Middle Tennessee–Elk subregions (24 percent, or 6.4 MGD; table 18).

Estimates of livestock withdrawals by county were determined by the USGS-NWUIP as part of the national effort to estimate water use for the United States for 2010. Water withdrawals were calculated from the 2010 livestock census by USDA-NASS and statewide drinking water requirement coefficients as described in the “Livestock, Aquaculture, and Mining” section in the “Data Compilation, Sources of Information, and Methodology” section of this report.

Figure 26. Source of water for livestock use in Alabama, 2010

[MGD, million gallons per day; values may not sum to total estimated use because of rounding.]

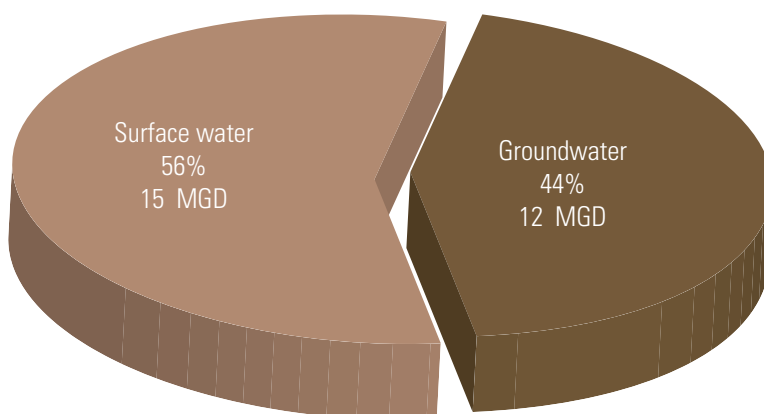


Figure 27. Livestock freshwater withdrawals by source and county in Alabama, 2010

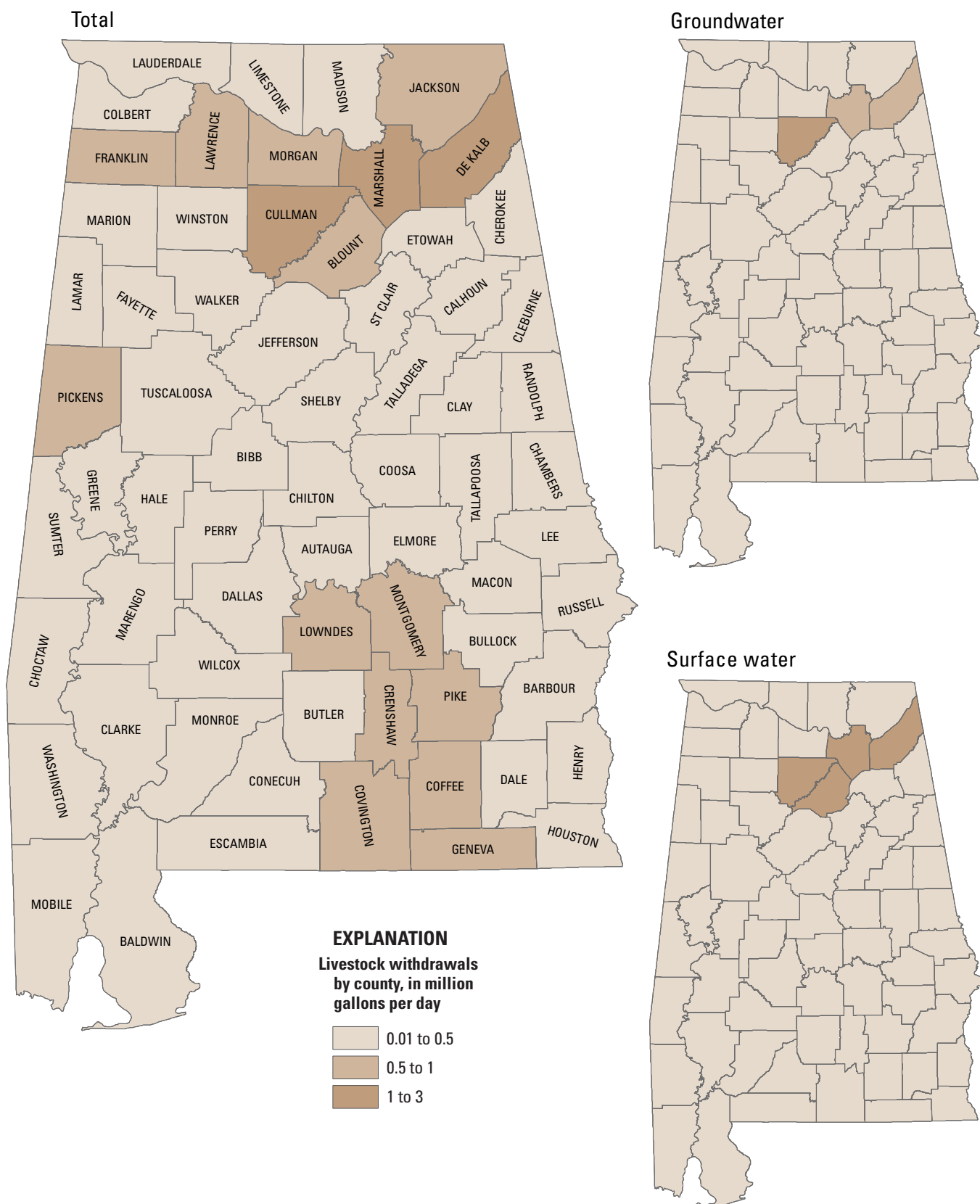


Table 17. Livestock freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

WITHDRAWALS by source in million gallons per day				WITHDRAWALS by source in million gallons per day			
County	Groundwater	Surface water	Total	County	Groundwater	Surface water	Total
Autauga	0.06	0.09	0.15	Jackson	0.32	0.39	0.71
Baldwin	0.16	0.19	0.35	Jefferson	0.03	0.04	0.07
Barbour	0.15	0.23	0.38	Lamar	0.05	0.05	0.10
Bibb	0.03	0.04	0.07	Lauderdale	0.19	0.27	0.46
Blount	0.47	0.51	0.98	Lawrence	0.30	0.40	0.70
Bullock	0.05	0.09	0.14	Lee	0.04	0.06	0.10
Butler	0.16	0.24	0.40	Limestone	0.16	0.21	0.37
Calhoun	0.13	0.19	0.32	Lowndes	0.23	0.34	0.57
Chambers	0.07	0.11	0.18	Macon	0.04	0.07	0.11
Cherokee	0.11	0.17	0.28	Madison	0.12	0.17	0.29
Chilton	0.07	0.11	0.18	Marengo	0.11	0.18	0.29
Choctaw	0.04	0.05	0.09	Marion	0.18	0.25	0.43
Clarke	0.03	0.05	0.08	Marshall	0.59	0.59	1.18
Clay	0.13	0.17	0.30	Mobile	0.13	0.16	0.29
Cleburne	0.14	0.16	0.30	Monroe	0.07	0.11	0.18
Coffee	0.34	0.46	0.80	Montgomery	0.24	0.35	0.59
Colbert	0.13	0.16	0.29	Morgan	0.30	0.37	0.67
Conecuh	0.06	0.10	0.16	Perry	0.08	0.10	0.18
Coosa	0.02	0.03	0.05	Pickens	0.31	0.32	0.63
Covington	0.25	0.34	0.59	Pike	0.24	0.34	0.58
Crenshaw	0.28	0.39	0.67	Randolph	0.20	0.23	0.43
Cullman	1.04	1.01	2.05	Russell	0.04	0.06	0.10
Dale	0.18	0.24	0.42	St Clair	0.04	0.06	0.10
Dallas	0.12	0.18	0.30	Shelby	0.15	0.21	0.36
De Kalb	0.97	1.09	2.06	Sumter	0.12	0.18	0.30
Elmore	0.08	0.09	0.17	Talladega	0.10	0.13	0.23
Escambia	0.06	0.08	0.14	Tallapoosa	0.04	0.06	0.10
Etowah	0.19	0.23	0.42	Tuscaloosa	0.09	0.11	0.20
Fayette	0.07	0.09	0.16	Walker	0.12	0.16	0.28
Franklin	0.32	0.43	0.75	Washington	0.09	0.10	0.19
Geneva	0.35	0.45	0.80	Wilcox	0.07	0.11	0.18
Greene	0.08	0.13	0.21	Winston	0.17	0.19	0.36
Hale	0.13	0.16	0.29	Total	11.68	14.8	26.48
Henry	0.11	0.17	0.28				
Houston	0.14	0.20	0.34				

Table 18. Livestock freshwater withdrawals by hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to total estimated use(s) because of rounding.]

Hydrologic subregion and subbasin	Withdrawals by source, in million gallons per day			Hydrologic subregion and subbasin	Withdrawals by source, in million gallons per day		
	Groundwater	Surface water	Total		Groundwater	Surface water	Total
APALACHICOLA				03160106	0.32	0.36	0.68
03130002	0.07	0.11	0.18	03160107	0.12	0.15	0.27
03130003	0.14	0.22	0.36	03160108	0.02	0.03	0.05
03130004	0.12	0.19	0.31	03160109	0.78	0.81	1.59
03130012	0.06	0.09	0.15	03160110	0.64	0.66	1.30
<i>Subtotal</i>	<i>0.39</i>	<i>0.61</i>	<i>1.00</i>	03160111	0.48	0.52	1.00
CHOCTAWHATCHEE-ESCAMBIA				03160112	0.08	0.10	0.18
03140103	0.13	0.18	0.31	03160113	0.20	0.26	0.46
03140104	0.02	0.03	0.05	03160201	0.16	0.24	0.40
03140106	0.06	0.07	0.13	03160202	0.05	0.08	0.13
03140107	0.01	0.02	0.03	03160203	0.09	0.11	0.20
03140201	0.54	0.73	1.27	03160204	0.08	0.10	0.18
03140202	0.53	0.73	1.26	03160205	0.07	0.09	0.16
03140203	0.08	0.10	0.18	<i>Subtotal</i>	<i>3.35</i>	<i>3.83</i>	<i>7.18</i>
03140301	0.25	0.35	0.60	PASCAGOULA			
03140302	0.23	0.33	0.56	03170002	0.00	0.01	0.01
03140303	0.18	0.28	0.46	03170003	0.00	0.00	0.00
03140304	0.07	0.10	0.17	03170008	0.06	0.07	0.13
03140305	0.02	0.03	0.05	03170009	0.02	0.03	0.05
<i>Subtotal</i>	<i>2.12</i>	<i>2.95</i>	<i>5.07</i>	<i>Subtotal</i>	<i>0.08</i>	<i>0.11</i>	<i>0.19</i>
ALABAMA				MIDDLE TENNESSEE-HIWASSEE			
03150105	0.31	0.40	0.71	06020001	0.06	0.07	0.13
03150106	0.65	0.83	1.48	<i>Subtotal</i>	<i>0.06</i>	<i>0.07</i>	<i>0.13</i>
03150107	0.22	0.30	0.52	MIDDLE TENNESSEE-ELK			
03150108	0.28	0.35	0.63	06030001	1.12	1.24	2.36
03150109	0.22	0.29	0.51	06030002	0.97	1.18	2.15
03150110	0.16	0.24	0.40	06030003	0.00	0.00	0.00
03150201	0.48	0.71	1.19	06030004	0.07	0.09	0.16
03150202	0.16	0.22	0.38	06030005	0.42	0.57	0.99
03150203	0.27	0.41	0.68	06030006	0.32	0.42	0.74
03150204	0.02	0.02	0.04	<i>Subtotal</i>	<i>2.90</i>	<i>3.50</i>	<i>6.40</i>
<i>Subtotal</i>	<i>2.77</i>	<i>3.77</i>	<i>6.54</i>	<i>Subtotal</i>	<i>2.90</i>	<i>3.50</i>	<i>6.40</i>
MOBILE-TOMBIGBEE				Total	11.67	14.84	26.51
03160101	0.05	0.06	0.11				
03160103	0.13	0.17	0.30				
03160105	0.08	0.09	0.17				



Workers gather catfish into nets to be sold. Photo courtesy of Debra Davis, Alabama Farmers Federation.

Aquaculture

Aquaculture water refers to water that is associated with the farming of organisms, such as finfish and shellfish, which live in water and offshore water withdrawals associated with fish hatcheries for food, restoration, conservation, or sport. Aquaculture occurs under controlled feeding, sanitation, and harvesting procedures primarily in ponds, flow-through raceways, and to a lesser extent, cages, net pens, and closed-recirculation tanks. All withdrawals were considered to be freshwater.

Freshwater withdrawals for aquaculture are listed by county in table 19. For 2010, the quantity of water withdrawn for aquaculture was approximately 59 MGD. Groundwater was the source for 54 percent of the total, or 32 MGD, and surface water was the source for the remaining 46 percent, or 27 MGD (figure 29). Aquaculture withdrawals were 1 percent of total withdrawals and 3 percent of total withdrawals for all categories excluding thermoelectric power (table 5).

The geographic distribution of total, groundwater, and surface-water withdrawals by county is shown in figure 30. Greene, Hale, and Perry Counties, which are located in the west-central part of the State in an area of moderate climate, abundant water, and heavy clay soils that are ideal for constructing earthen ponds (Alabama Education Aquaculture Recreational Fishing, ALEARN, 2008; Kidd and Lambeth, 1995; Boyd and others, 2005), accounted for 61 percent (36 MGD) of the aquaculture withdrawals. Catfish farming predominates in this area where rainfall and runoff filled more than 75 percent of the ponds and water levels were maintained in dry weather by groundwater (Boyd and others, 2005). Other ponds in the area were embankment ponds filled with groundwater.

There were 268 catfish farms operating in Alabama in 2007 (U.S. Department of Agriculture, National Agricultural Statistics Service, 2009). In 2007, Alabama ranked second only to Mississippi in catfish production nationwide.

Estimates of aquaculture water withdrawals by source of supply were determined by the USGS-NWUIP as part of the national effort to estimate water use for the United States for 2010. Water withdrawals were estimated from the commercial datasets produced by NASS for the 2007 Census of Agriculture and the noncommercial datasets produced by NASS for the 2002 Census of Agriculture as described in the “Livestock, Aquaculture, and Mining” section in the “Data Compilation, Sources of Information, and Methodology” section of this report. Groundwater and surface water were determined according to the USGS estimates for source of water for aquaculture for 2005 (U.S. Geological Survey, 2014).

Figure 29. Source of water for aquaculture use in Alabama, 2010

[MGD million gallons per day; values may not sum to total estimated use because of rounding.]

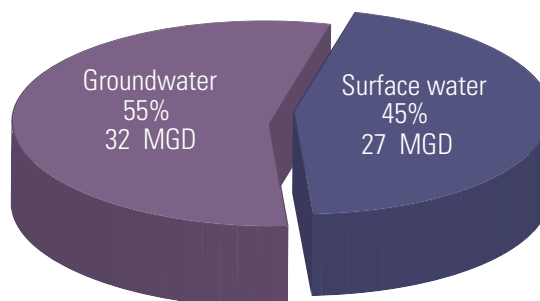


Figure 30. Aquaculture freshwater withdrawals by source and county in Alabama, 2010

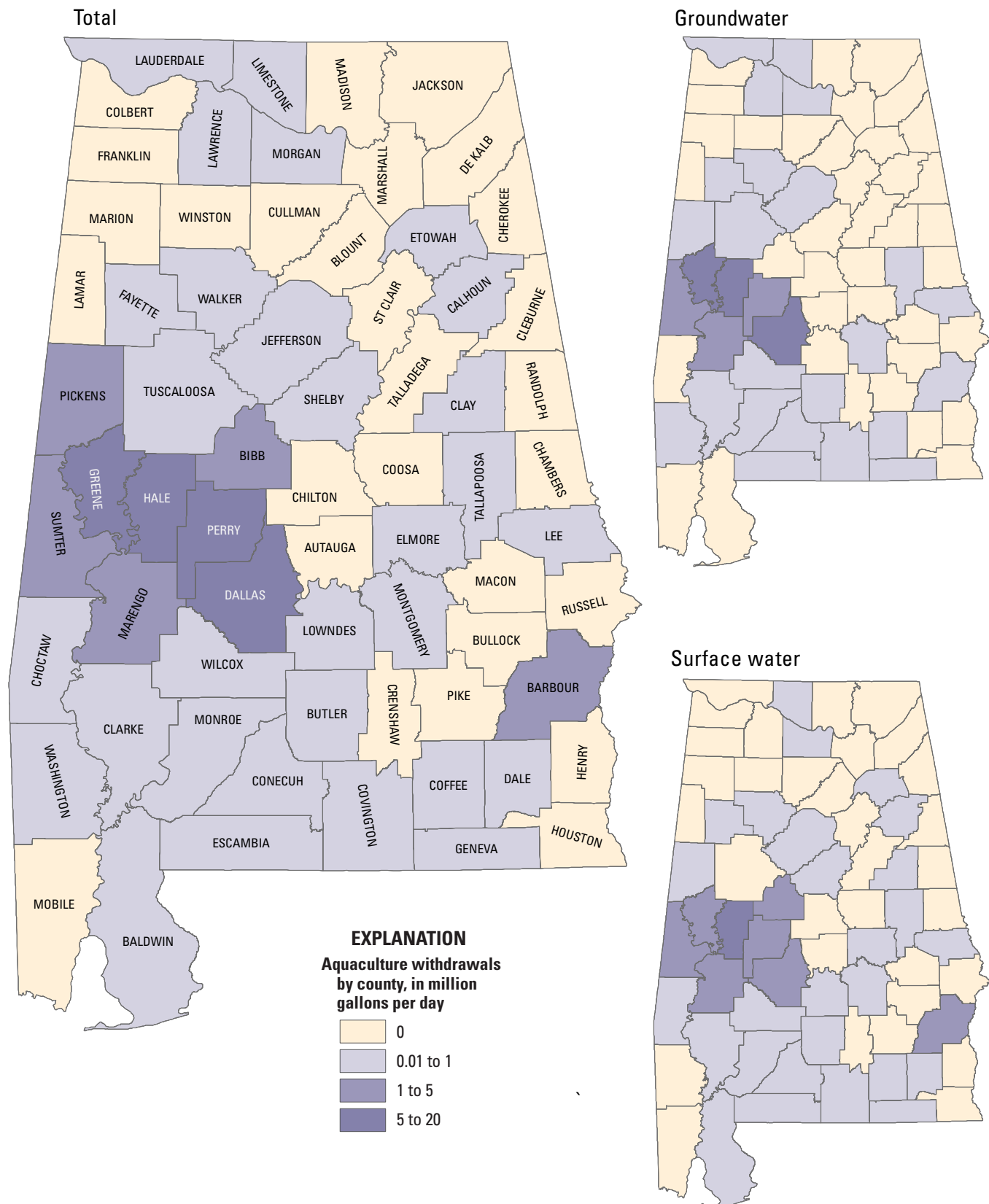


Table 19. Aquaculture freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

WITHDRAWALS by source in million gallons per day				WITHDRAWALS by source in million gallons per day			
County	Groundwater	Surface water	Total	County	Groundwater	Surface water	Total
Autauga	0.00	0.00	0.00	Jackson	0.00	0.00	0.00
Baldwin	0.00	0.16	0.16	Jefferson	0.01	0.45	0.46
Barbour	0.09	2.34	2.43	Lamar	0.00	0.00	0.00
Bibb	0.00	1.45	1.45	Lauderdale	0.02	0.00	0.02
Blount	0.00	0.00	0.00	Lawrence	0.05	0.00	0.05
Bullock	0.00	0.00	0.00	Lee	0.02	0.03	0.05
Butler	0.27	0.23	0.50	Limestone	0.18	0.15	0.33
Calhoun	0.00	0.02	0.02	Lowndes	0.00	0.03	0.03
Chambers	0.00	0.00	0.00	Macon	0.00	0.00	0.00
Cherokee	0.00	0.00	0.00	Madison	0.00	0.00	0.00
Chilton	0.00	0.00	0.00	Marengo	1.45	1.19	2.64
Choctaw	0.00	0.03	0.03	Marion	0.00	0.00	0.00
Clarke	0.03	0.03	0.06	Marshall	0.00	0.00	0.00
Clay	0.00	0.01	0.01	Mobile	0.00	0.00	0.00
Cleburne	0.00	0.00	0.00	Monroe	0.03	0.03	0.06
Coffee	0.48	0.26	0.74	Montgomery	0.16	0.17	0.33
Colbert	0.00	0.00	0.00	Morgan	0.02	0.02	0.04
Conecuh	0.07	0.07	0.14	Perry	4.58	4.01	8.59
Coosa	0.00	0.00	0.00	Pickens	0.50	0.50	1.00
Covington	0.05	0.05	0.10	Pike	0.00	0.00	0.00
Crenshaw	0.00	0.00	0.00	Randolph	0.00	0.00	0.00
Cullman	0.00	0.00	0.00	Russell	0.00	0.00	0.00
Dale	0.00	0.05	0.05	St Clair	0.00	0.00	0.00
Dallas	5.00	2.14	7.14	Shelby	0.00	0.04	0.04
De Kalb	0.00	0.00	0.00	Sumter	1.49	1.55	3.04
Elmore	0.00	0.05	0.05	Talladega	0.00	0.00	0.00
Escambia	0.02	0.01	0.03	Tallapoosa	0.02	0.78	0.80
Etowah	0.00	0.31	0.31	Tuscaloosa	0.04	0.00	0.04
Fayette	0.02	0.02	0.04	Walker	0.01	0.02	0.03
Franklin	0.00	0.00	0.00	Washington	0.03	0.00	0.03
Geneva	0.10	0.03	0.13	Wilcox	0.23	0.23	0.46
Greene	5.71	4.13	9.84	Winston	0.00	0.00	0.00
Hale	11.77	6.06	17.83	Total	32.45	26.65	59.10
Henry	0.00	0.00	0.00				
Houston	0.00	0.00	0.00				



Top: Lumber yard wet deck. Photo courtesy of Michael Harper, ADECA-OWR.

Below: Boise White Paper, LLC Pulp and Paper facility. Photo courtesy of Alabama Pulp and Paper Council.

Industrial

Industrial water is water used for fabrication, processing, washing, and cooling and includes such industries as chemical and allied products, food, paper and allied products, petroleum refining, and steel. Total industrial water use is the sum of public-supplied industrial and commercial deliveries and self-supplied industrial and commercial withdrawals. For this study, total industrial use and public-supplied industrial/commercial deliveries were estimated at the state level only.

Self-supplied industrial withdrawals are listed by county and by hydrologic subbasin in tables 20 and 21, respectively. For 2010, self-supplied industrial withdrawals were 562 MGD, which is 6 percent of total withdrawals and 32 percent of total withdrawals excluding thermoelectric power (table 5). Surface water was the source for 95 percent (535 MGD) of the withdrawals, and groundwater was the source of the remaining 5 percent (27 MGD) (figure 31). Statewide, combined public-supplied industrial and commercial deliveries were 393 MGD. Total industrial water use was 955 MGD.

The geographic distribution of total, groundwater, and surface-water withdrawals for self-supplied industrial use by county and by hydrologic subbasin is shown, respectively, in figures 32 and 33. Withdrawals for self-supplied industrial use occurred in 36 counties. Ninety two percent (92%) of the total withdrawals and 95 percent of the surface-water withdrawals occurred in the 14 counties that withdrew more than 10 MGD or more (figure 32). The largest withdrawals occurred in Morgan, Colbert, Lawrence, Monroe, and Choctaw Counties with withdrawals that were more than 40 MGD each. Withdrawals in these counties accounted for approximately 52 percent (295 MGD) of the total self-supplied industrial withdrawals.

The Middle Tennessee–Elk hydrologic subregion accounted for 39 percent (218 MGD) of the total self-supplied industrial withdrawals with virtually all of the withdrawals being surface water (table 21). Within the Middle Tennessee–Elk hydrologic subregion, the largest total withdrawals occurred in the Wheeler (06030002) and Pickwick Lake (06030005) subbasins. The largest groundwater withdrawals were in the Mobile–Tombigbee hydrologic subregion (15 MGD) and accounted for 55 percent of the statewide self-supplied industrial groundwater withdrawals.

Figure 31. Source of water for self-supplied industrial use in Alabama, 2010

[MGD, million gallons per day; values may not sum to total estimated use because of rounding.]

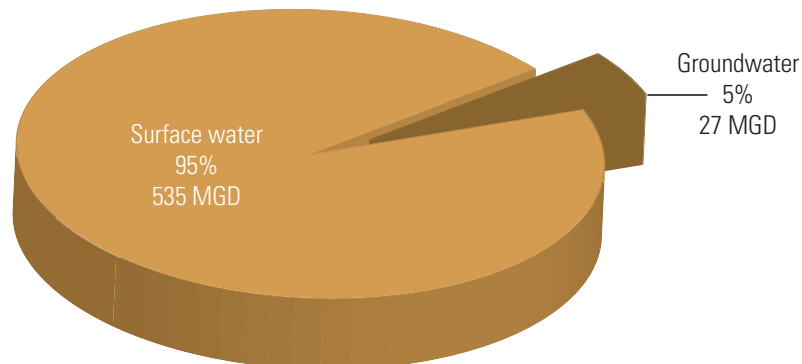


Figure 32. Self-supplied industrial freshwater withdrawals by county in Alabama, 2010

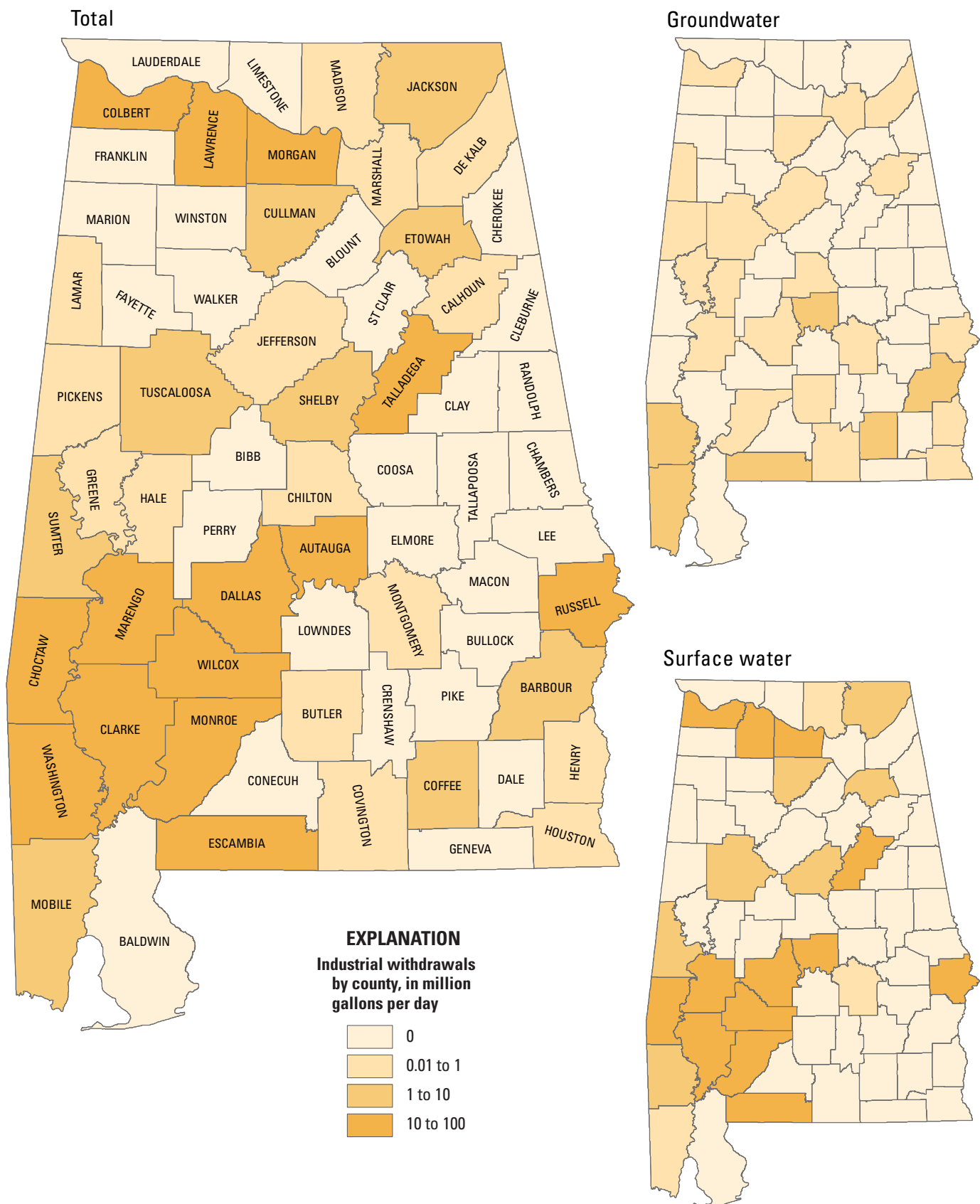
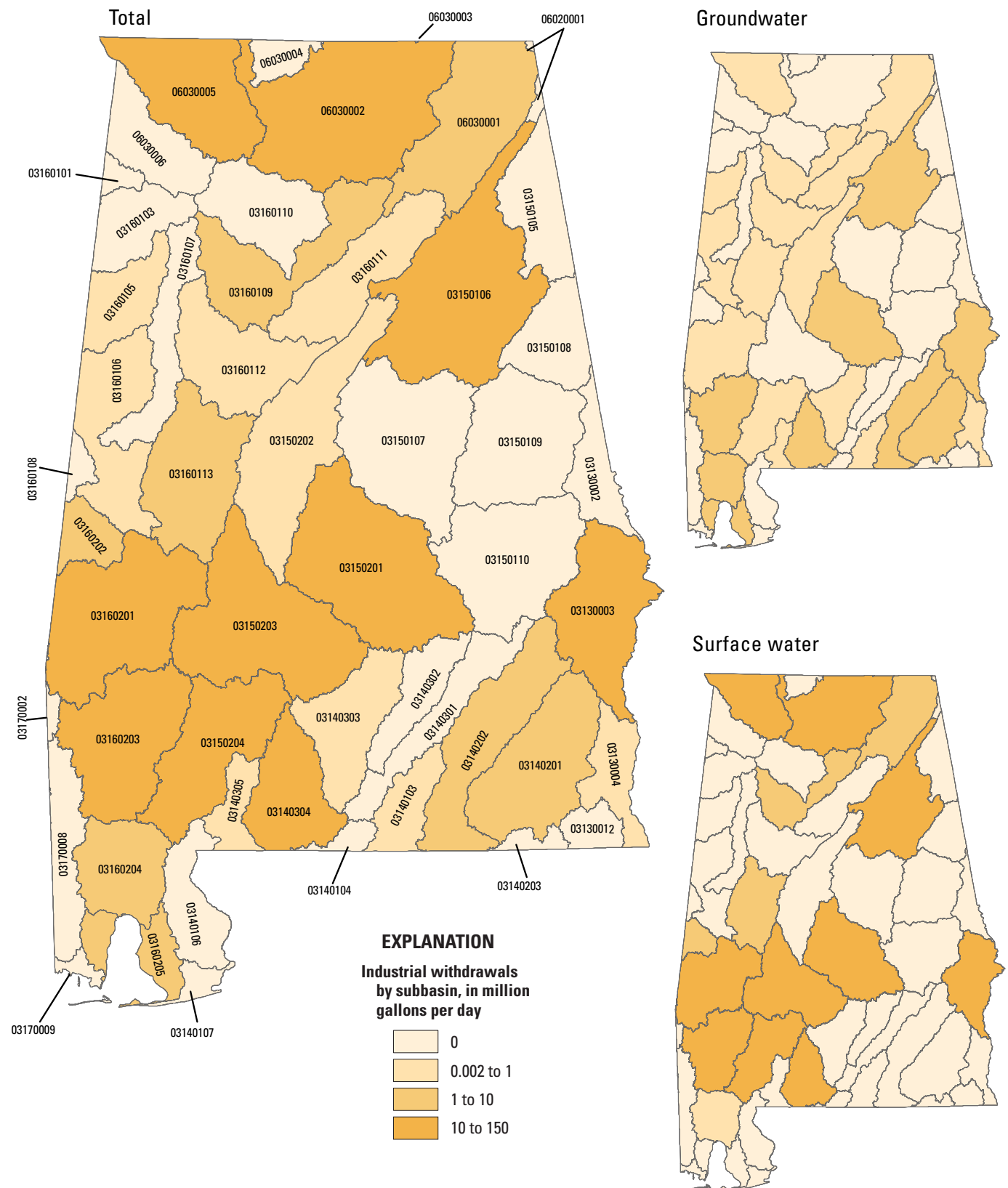


Figure 33. Self-supplied industrial freshwater withdrawals by subbasin in Alabama, 2010



Pulp, paper, and paperboard mills (NAICS 3221, 339 MGD), basic chemical manufacturing (NAICS 3251, 107 MGD), pesticide, fertilizer, and other agricultural chemical manufacturing (NAICS 3253, 36 MGD) accounted for 88 percent of total self-supplied industrial withdrawals (figure 34). Pulp, paper, and paperboard mills accounted for the largest self-supplied industrial surface-water withdrawals (336 MGD) and the largest self-supplied industrial groundwater withdrawals (12 MGD). The largest withdrawals for pulp, paper, and paperboard mills (NAICS 3221) occurred in Lawrence County. Detailed water use by NAICS for counties and hydrologic subbasins can be found in Appendix A and B, respectively.

A progressive shift in source of water for industrial and commercial use from self-supplied to public-supplied water has occurred in Alabama from 1975 (1,770 MGD, highest value of total industrial and commercial use since 1950) through 2010 (955 MGD; Murray

and Reeves, 1977; Solley and others, 1983; Solley and others, 1988; Solley and others, 1993; and Solley and others, 1998). The historic data show that public-supply deliveries to the industrial and commercial sector have increased, for example, from about 15 percent of total industrial and commercial use in 1975 to about 25 percent in 1985 and about 47 percent in 2010 (Murray and Reeves, 1977; Solley and other, 1998).

OWR AWURP was the source for site-specific industrial water withdrawal and ancillary data. The Alabama Department of Commerce provided nearly all of the NAICS codes for specific industries. Public-supply deliveries to commercial and industrial users were determined at a state level from the Alabama Public Water System Survey for 2010 (Appendix D). Details are in the “Thermoelectric Power and Industrial” section in the “Data Compilation, Sources of Information, and Methodology” section in this report.

Figure 34. Distribution of total industrial withdrawals by North American Industry Classification System grouping in Alabama, 2010

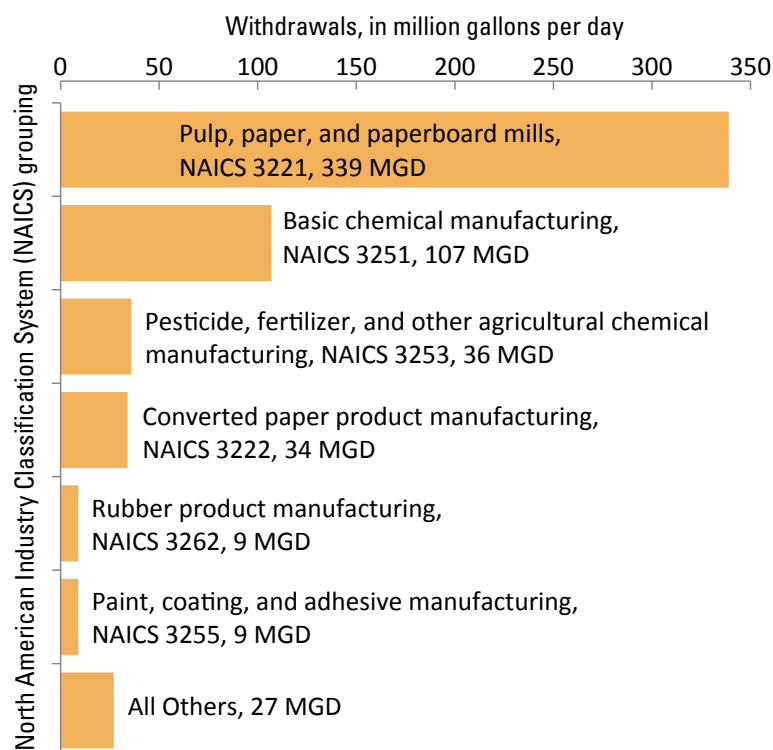


Table 20. Self-supplied industrial freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

WITHDRAWALS by source in million gallons per day				WITHDRAWALS by source in million gallons per day			
County	Groundwater	Surface water	Total	County	Groundwater	Surface water	Total
Autauga	2.00	31.13	33.13	Jackson	0.00	8.91	8.91
Baldwin	0.00	0.00	0.00	Jefferson	0.50	0.00	0.50
Barbour	1.57	0.00	1.57	Lamar	0.11	0.00	0.11
Bibb	0.00	0.00	0.00	Lauderdale	0.00	0.00	0.00
Blount	0.00	0.00	0.00	Lawrence	0.00	60.11	60.11
Bullock	0.00	0.00	0.00	Lee	0.00	0.00	0.00
Butler	0.30	0.00	0.30	Limestone	0.00	0.00	0.00
Calhoun	0.96	0.00	0.96	Lowndes	0.00	0.00	0.00
Chambers	0.00	0.00	0.00	Macon	0.00	0.00	0.00
Cherokee	0.00	0.00	0.00	Madison	0.00	0.73	0.73
Chilton	0.35	0.00	0.35	Marengo	0.2	18.52	18.72
Choctaw	0.00	40.76	40.76	Marion	0.00	0.00	0.00
Clarke	0.00	20.22	20.22	Marshall	0.38	0.00	0.38
Clay	0.00	0.00	0.00	Mobile	6.90	0.70	7.60
Cleburne	0.00	0.00	0.00	Monroe	0.13	46.42	46.55
Coffee	2.22	0.00	2.22	Montgomery	0.04	0.01	0.05
Colbert	0.22	69.54	69.76	Morgan	0.00	78.02	78.02
Conecuh	0.00	0.00	0.00	Perry	0.00	0.00	0.00
Coosa	0.00	0.00	0.00	Pickens	0.01	0.00	0.01
Covington	0.05	0.00	0.05	Pike	0.00	0.00	0.00
Crenshaw	0.00	0.00	0.00	Randolph	0.00	0.00	0.00
Cullman	0.43	1.84	2.27	Russell	0.92	27.63	28.55
Dale	0.00	0.00	0.00	St Clair	0.00	0.00	0.00
Dallas	0.14	32.19	32.33	Shelby	0.00	4.45	4.45
De Kalb	0.77	0.00	0.77	Sumter	0.00	2.03	2.03
Elmore	0.00	0.00	0.00	Talladega	0.00	24.67	24.67
Escambia	1.40	33.66	35.06	Tallapoosa	0.00	0.00	0.00
Etowah	0.00	9.21	9.21	Tuscaloosa	0.74	1.04	1.78
Fayette	0.00	0.00	0.00	Walker	0.00	0.00	0.00
Franklin	0.00	0.00	0.00	Washington	6.16	4.87	11.03
Geneva	0.00	0.00	0.00	Wilcox	0.00	18.31	18.31
Greene	0.03	0.00	0.03	Winston	0.00	0.00	0.00
Hale	0.02	0.00	0.02	Total	27.26	534.97	562.23
Henry	0.54	0.00	0.54				
Houston	0.17	0.00	0.17				

Table 21. Self-supplied industrial freshwater withdrawals by hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by source, in million gallons per day			Hydrologic subregion and subbasin	WITHDRAWALS by source, in million gallons per day		
	Groundwater	Surface water	Total		Groundwater	Surface water	Total
APALACHICOLA				03160106	0.01	0.00	0.01
03130002	0.00	0.00	0.00	03160107	0.00	0.00	0.00
03130003	2.49	27.63	30.12	03160108	0.00	0.00	0.00
03130004	0.44	0.00	0.44	03160109	0.43	1.84	2.27
03130012	0.00	0.00	0.00	03160110	0.00	0.00	0.00
<i>Subtotal</i>	<i>2.93</i>	<i>27.63</i>	<i>30.56</i>	03160111	0.34	0.00	0.34
CHOCTAWHATCHEE-ESCAMBIA				03160112	0.20	0.00	0.20
03140103	0.05	0.00	0.05	03160113	0.59	1.04	1.63
03140104	0.00	0.00	0.00	03160201	0.20	60.20	60.40
03140106	0.00	0.00	0.00	03160202	0.00	1.11	1.11
03140107	0.00	0.00	0.00	03160203	7.08	25.09	32.17
03140201	1.35	0.00	1.35	03160204	4.96	0.70	5.66
03140202	1.14	0.00	1.14	03160205	1.02	0.00	1.02
03140203	0.00	0.00	0.00	<i>Subtotal</i>	<i>14.94</i>	<i>89.98</i>	<i>104.92</i>
03140301	0.00	0.00	0.00	PASCAGOULA			
03140302	0.00	0.00	0.00	03170002	0.00	0.00	0.00
03140303	0.30	0.00	0.30	03170003	0.00	0.00	0.00
03140304	1.40	33.66	35.06	03170008	0.00	0.00	0.00
03140305	0.00	0.00	0.00	03170009	0.00	0.00	0.00
<i>Subtotal</i>	<i>4.24</i>	<i>33.66</i>	<i>37.90</i>	<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
ALABAMA				MIDDLE TENNESSEE-HIWASSEE			
03150105	0.00	0.00	0.00	06020001	0.00	0.00	0.00
03150106	1.73	38.33	40.06	<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
03150107	0.00	0.00	0.00	MIDDLE TENNESSEE-ELK			
03150108	0.00	0.00	0.00	06030001	0.38	8.91	9.29
03150109	0.00	0.00	0.00	06030002	0.00	138.86	138.86
03150110	0.00	0.00	0.00	06030003	0.00	0.00	0.00
03150201	2.53	63.33	65.86	06030004	0.00	0.00	0.00
03150202	0.16	0.00	0.16	06030005	0.22	69.54	69.76
03150203	0.00	18.31	18.31	06030006	0.00	0.00	0.00
03150204	0.13	46.42	46.55	<i>Subtotal</i>	<i>0.60</i>	<i>217.31</i>	<i>217.91</i>
<i>Subtotal</i>	<i>4.55</i>	<i>166.39</i>	<i>170.94</i>	Total	27.26	534.97	562.23
MOBILE-TOMBIGBEE							
03160101	0.00	0.00	0.00				
03160103	0.00	0.00	0.00				
03160105	0.11	0.00	0.11				



Sand screw used to classify manufactured sand (production). Photo courtesy of Joe Howle, Vulcan Construction Materials, LP.

Mining

Mining water refers to water that is used for the extraction of naturally occurring minerals including solids, such as coal, sand, gravel, and other ores; liquids, such as crude petroleum; and gases, such as natural gas. Mining also includes uses associated with quarrying, milling, and other preparations customarily done at a mine site or as part of a mining activity. Mining water use does not include water associated with dewatering of an aquifer that is not put to beneficial use and also does not include water used in processing, such as smelting, refining petroleum, or slurry pipeline operations. These processing uses are included in the industrial category.

Mining water withdrawals are listed by county in table 22. For 2010, total mining withdrawals were 21 MGD, which is less than 1 percent of total withdrawals and 1 percent of total withdrawals for all categories excluding thermoelectric power (table 5). Groundwater was the source of approximately 62 percent (13 MGD) of withdrawals, and surface water was the source of the remaining 38 percent (8 MGD) (figure 35). All water withdrawals were considered to be freshwater although some low-salinity groundwater has been tapped in parts of the state (Marlon Cook, Alabama Geological Survey, oral commun., January 2008).

The geographic distribution of total, groundwater, and surface-water withdrawals for mining use by county is shown in figure 36. Shelby, Jefferson, Montgomery, Sumter, Fayette, Tuscaloosa, and Limestone Counties withdrew more than 1 MGD and accounted for 48 percent of the total mining water withdrawals. Eighteen counties had no mining water use.

Mining water use was estimated by the USGS using the same methods as 2005 and are documented in “Methods for Estimating Water Withdrawals for Mining in the United States, 2005” (Lovelace, 2009). The 2010 mining estimates from USGS were amended using some site specific mining data from the OWR AWURP.

Figure 35. Source of water for mining use in Alabama, 2010

[MGD, million gallons per day; values may not sum to total estimated use because of rounding.]

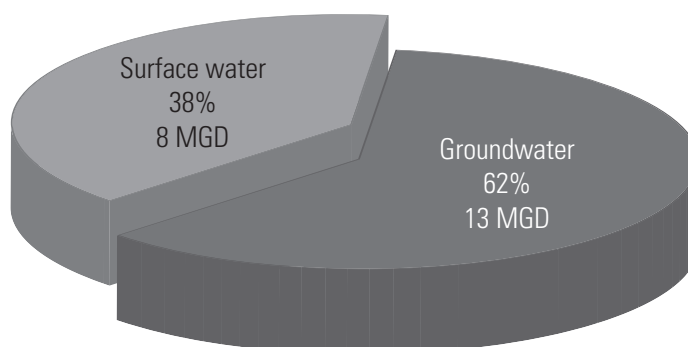
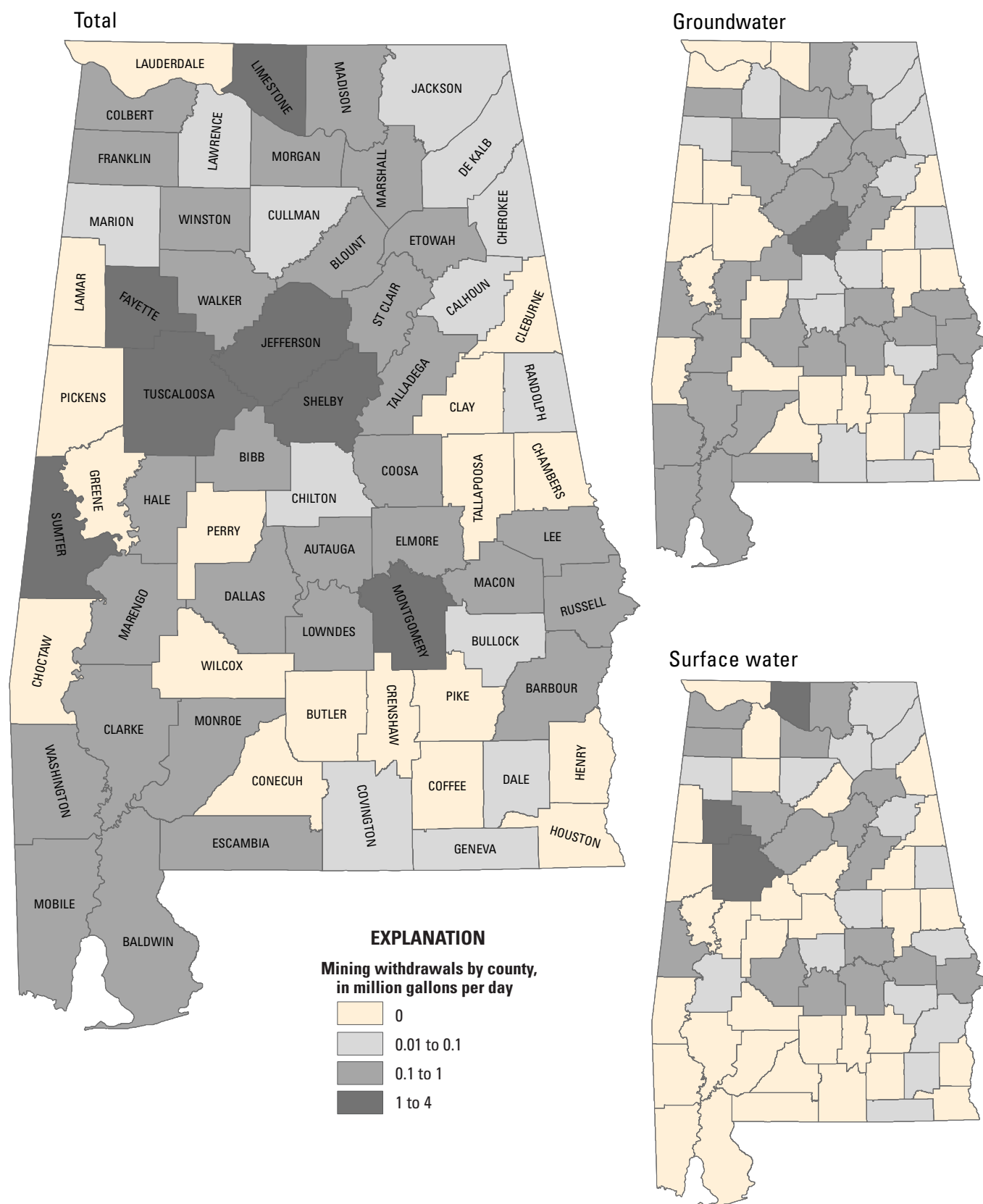


Table 22. Mining freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

WITHDRAWALS by source in million gallons per day				WITHDRAWALS by source in million gallons per day			
County	Groundwater	Surface water	Total	County	Groundwater	Surface water	Total
Autauga	0.09	0.04	0.13	Jackson	0.06	0.03	0.09
Baldwin	0.21	0.00	0.21	Jefferson	0.85	0.65	1.50
Barbour	0.13	0.06	0.19	Lamar	0.00	0.00	0.00
Bibb	0.36	0.00	0.36	Lauderdale	0.00	0.00	0.00
Blount	0.12	0.00	0.12	Lawrence	0.01	0.00	0.01
Bullock	0.04	0.02	0.06	Lee	0.16	0.07	0.23
Butler	0.00	0.00	0.00	Limestone	0.00	1.04	1.04
Calhoun	0.07	0.03	0.10	Lowndes	0.31	0.15	0.46
Chambers	0.00	0.00	0.00	Macon	0.40	0.20	0.60
Cherokee	0.01	0.00	0.01	Madison	0.31	0.14	0.45
Chilton	0.01	0.00	0.01	Marengo	0.16	0.08	0.24
Choctaw	0.00	0.00	0.00	Marion	0.03	0.06	0.09
Clarke	0.35	0.00	0.35	Marshall	0.12	0.06	0.18
Clay	0.00	0.00	0.00	Mobile	0.16	0.00	0.16
Cleburne	0.00	0.00	0.00	Monroe	0.30	0.00	0.30
Coffee	0.00	0.00	0.00	Montgomery	0.98	0.46	1.44
Colbert	0.00	0.73	0.73	Morgan	0.26	0.12	0.38
Conecuh	0.00	0.00	0.00	Perry	0.00	0.00	0.00
Coosa	0.08	0.04	0.12	Pickens	0.00	0.00	0.00
Covington	0.05	0.00	0.05	Pike	0.00	0.00	0.00
Crenshaw	0.00	0.00	0.00	Randolph	0.06	0.03	0.09
Cullman	0.01	0.02	0.03	Russell	0.39	0.19	0.58
Dale	0.05	0.03	0.08	St Clair	0.41	0.20	0.61
Dallas	0.27	0.12	0.39	Shelby	2.71	0.00	2.71
De Kalb	0.07	0.03	0.10	Sumter	0.78	0.36	1.14
Elmore	0.32	0.15	0.47	Talladega	0.42	0.20	0.62
Escambia	0.41	0.00	0.41	Tallapoosa	0.00	0.00	0.00
Etowah	0.24	0.11	0.35	Tuscaloosa	0.00	1.09	1.09
Fayette	0.00	1.10	1.10	Walker	0.12	0.37	0.49
Franklin	0.31	0.14	0.45	Washington	0.11	0.00	0.11
Geneva	0.07	0.03	0.10	Wilcox	0.00	0.00	0.00
Greene	0.00	0.00	0.00	Winston	0.11	0.00	0.11
Hale	0.11	0.00	0.11	Total	12.60	8.15	20.75
Henry	0.00	0.00	0.00				
Houston	0.00	0.00	0.00				

Figure 36. Mining freshwater withdrawals by county in Alabama, 2010





Cooling tower at Miller Steam Plant. Photo courtesy of Alabama Power Company.

Thermoelectric Power

Thermoelectric-power water is water used in the process of generating electricity with steam-driven turbine generators and for other onsite needs. For 2010, thermoelectric-power water withdrawals were compiled by **cooling-system** type because cooling system type is the primary determinant for the amount of consumptive use relative to withdrawals. Once-through cooling (also known as open-loop cooling) refers to cooling systems in which water is withdrawn from a source, circulated through heat exchangers, and then returned to a surface-water body. Recirculating cooling (also known as closed-cycle cooling) refers to **cooling systems** in which water is withdrawn from a source, circulated through heat exchangers, cooled, and then recycled. Subsequent water withdrawals for a recirculating-cooling system are used to replace water lost to evaporation, blowdown, drift, and leakage. Thermoelectric-power withdrawals were reported by the USGS by condenser cooling water use from 1950 to 1980, by fuel-type from 1985 through 1995, and by cooling type for 2005 and 2010.

Total thermoelectric-power water withdrawals are listed by county and hydrologic sub-basin in tables 23 and 24. Total thermoelectric-power water withdrawals by cooling type are listed by county and hydrologic subbasin in tables 25 and 26. The total quantity of water withdrawn for thermoelectric power in 2010 was 8,257 MGD. Surface water was the source for all thermoelectric power withdrawals. Thermoelectric-power withdrawals accounted for 83 percent of total water withdrawals and 87 percent of total surface-water withdrawals. Thermoelectric-power plants that used self-supplied water produced 124,974 net gigawatt-hours of energy in 2010.

The geographic distribution of total, groundwater, and surface-water withdrawals for thermoelectric power by county and hydrologic subbasin are shown respectively in figures 37 and 38. Although some power generation occurs in every hydrologic subregion with the exception of Pascagoula and the Alabama portion of the Middle Tennessee Hiwassee, water was used in power generation in only 13 counties (tables 23 and 24). The largest withdrawals were in Limestone, Colbert, Jackson, (Middle Tennessee–Elk subregion), and Mobile (Mobile–Tombigbee subregion) Counties.

Power plants equipped with once-through cooling systems accounted for 98 percent of water withdrawals for thermoelectric power in Alabama (tables 25 and 26). The percentage of consumptive use from generating units with once-through cooling ranged from zero to nearly 7 percent (median, 0.1 percent) compared to the percentage of consumptive use from generating units with recirculating cooling, which ranged from about 30 percent to 65 percent (median 44 percent; Energy Information Administration, 2008). Recirculating-cooling units require less water. A comparison of a once-through cooling plant to a recirculating-cooling plant showed that a once-through cooling generating unit typically used about 60 gallons of water to produce 1 kilowatt-hour (kWh) of electricity; a recirculating-cooling generating unit typically used about 20 gallons of water to produce 1 kWh of electricity (Energy Information Administration, 2008).

Sources of data for thermoelectric power were OWR AWURP, DOE-EIA, and individual facilities. The AWURP eWater application includes monthly average daily water withdrawals, source of water, and location information. For 2010, steam-electric plants generating 10 megawatts or more provided cooling type, water withdrawal, **return flow**, and consumptive use by generating unit (except for nuclear power plants) to DOE-EIA and all power plants provided power generation by generating unit (Energy Information Administration, 2008, 2009a, b). Details are in the “Thermoelectric Power and Industrial” section in the “Data Compilation, Sources of Information, and Methodology” section in this report.

Figure 37. Thermoelectric-power freshwater withdrawals by source and county in Alabama, 2010

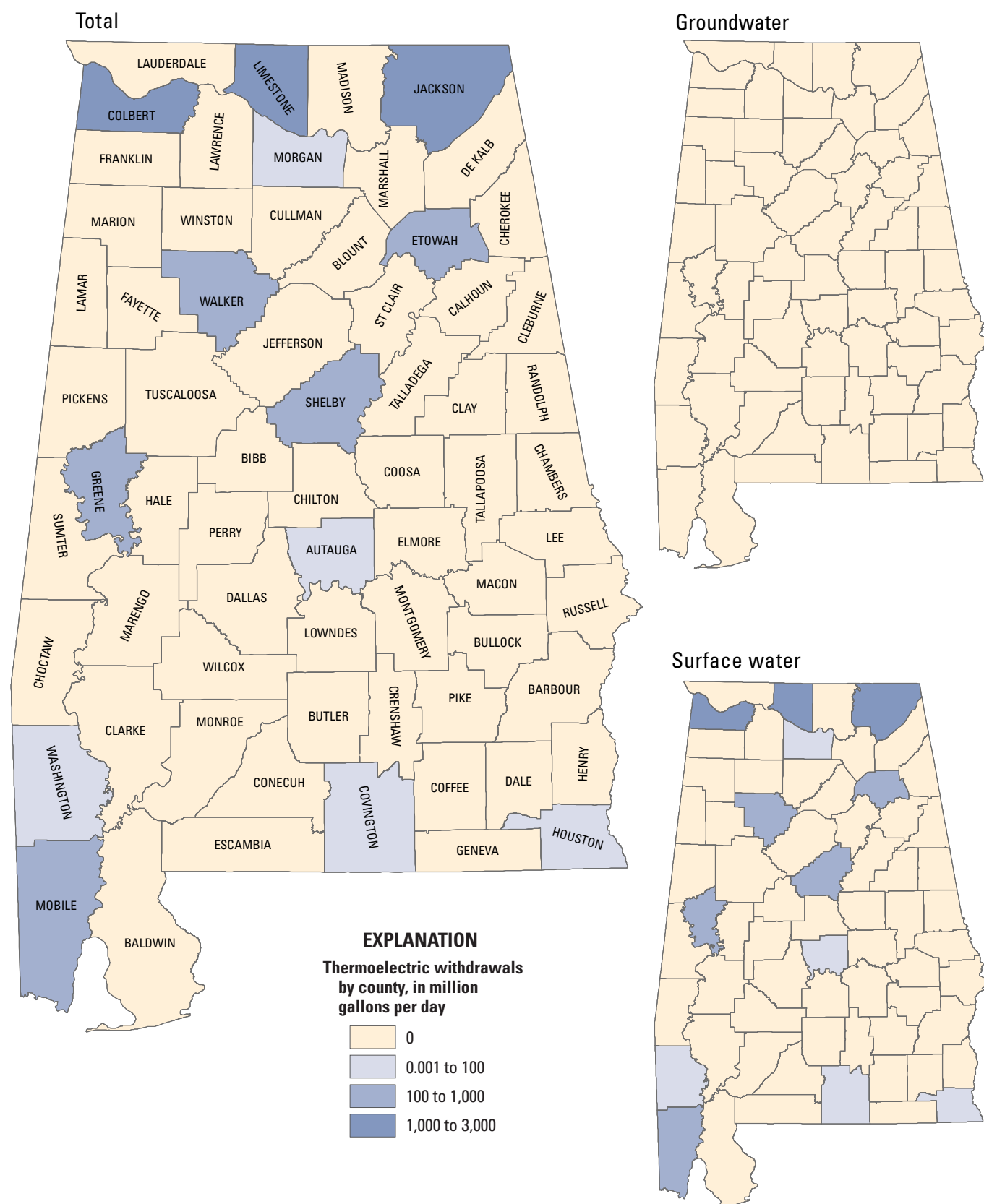


Figure 38. Thermoelectric-power freshwater withdrawals by source and subbasin in Alabama, 2010

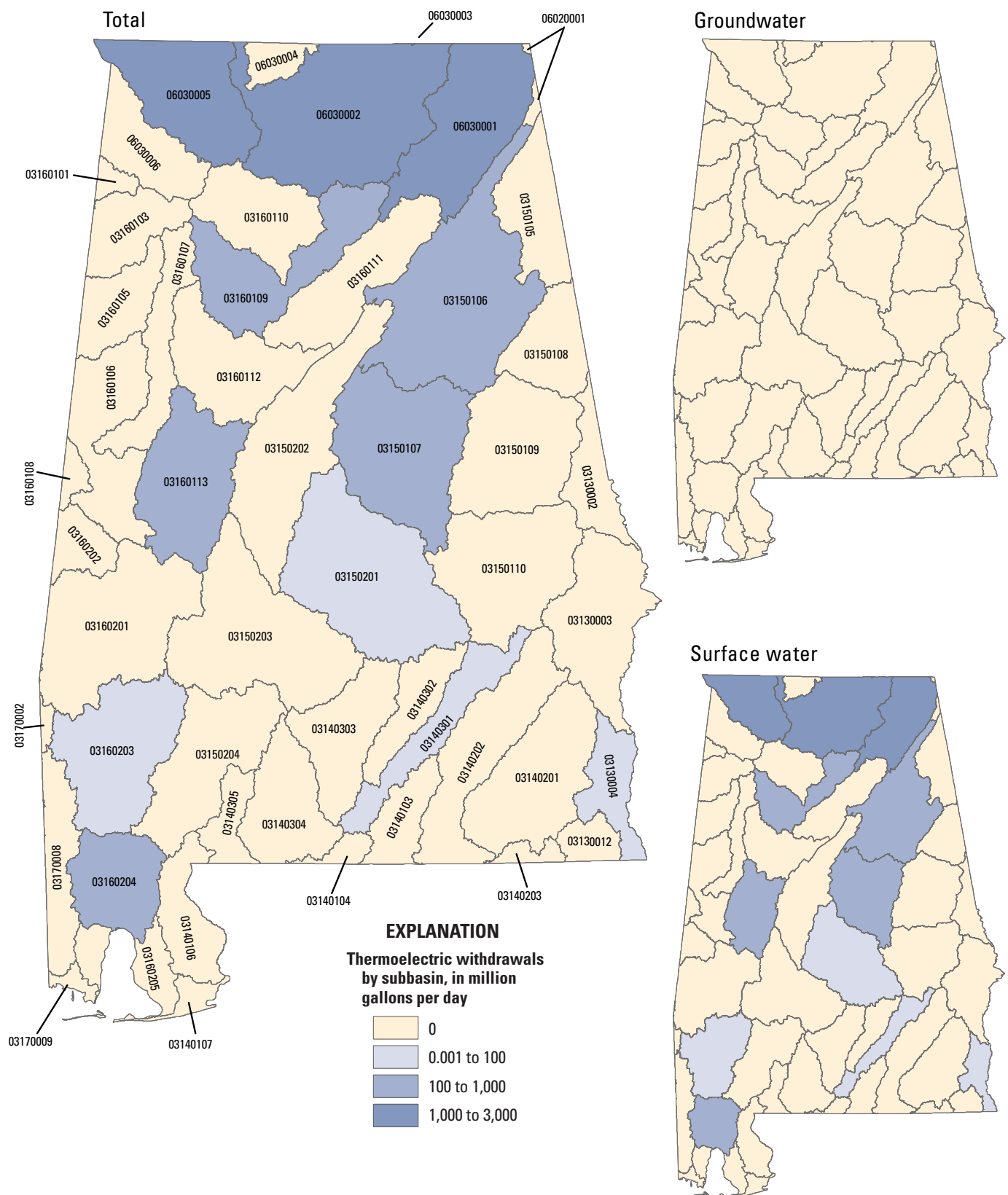


Table 23. Thermoelectric-power freshwater withdrawals by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	WITHDRAWALS by source in million gallons per day			Net power produced, in gigawatt- hours	County	WITHDRAWALS by source in million gallons per day			Net power produced, in gigawatt- hours
	Groundwater	Surface water	Total			Groundwater	Surface water	Total	
Autauga	0.00	5.83	5.83	6,738.26	Jackson	0.00	1,044.42	1,044.42	5,702.49
Baldwin	0.00	0.00	0.00	0.00	Jefferson	0.00	0.00	0.00	0.00
Barbour	0.00	0.00	0.00	0.00	Lamar	0.00	0.00	0.00	0.00
Bibb	0.00	0.00	0.00	0.00	Lauderdale	0.00	0.00	0.00	0.00
Blount	0.00	0.00	0.00	0.00	Lawrence	0.00	0.00	0.00	0.00
Bullock	0.00	0.00	0.00	0.00	Lee	0.00	0.00	0.00	0.00
Butler	0.00	0.00	0.00	0.00	Limestone	0.00	2,724.37	2,724.37	24,771.14
Calhoun	0.00	0.00	0.00	0.00	Lowndes	0.00	0.00	0.00	0.00
Chambers	0.00	0.00	0.00	0.00	Macon	0.00	0.00	0.00	0.00
Cherokee	0.00	0.00	0.00	0.00	Madison	0.00	0.00	0.00	0.00
Chilton	0.00	0.00	0.00	0.00	Marengo	0.00	0.00	0.00	0.00
Choctaw	0.00	0.00	0.00	0.00	Marion	0.00	0.00	0.00	0.00
Clarke	0.00	0.00	0.00	0.00	Marshall	0.00	0.00	0.00	0.00
Clay	0.00	0.00	0.00	0.00	Mobile	0.00	989.29	989.29	15,188.89
Cleburne	0.00	0.00	0.00	0.00	Monroe	0.00	0.00	0.00	0.00
Coffee	0.00	0.00	0.00	0.00	Montgomery	0.00	0.00	0.00	0.00
Colbert	0.00	1,262.30	1,262.30	6,035.48	Morgan	0.00	6.43	6.43	7,307.18
Conecuh	0.00	0.00	0.00	0.00	Perry	0.00	0.00	0.00	0.00
Coosa	0.00	0.00	0.00	0.00	Pickens	0.00	0.00	0.00	0.00
Covington	0.00	1.74	1.74	2,834.29	Pike	0.00	0.00	0.00	0.00
Crenshaw	0.00	0.00	0.00	0.00	Randolph	0.00	0.00	0.00	0.00
Cullman	0.00	0.00	0.00	0.00	Russell	0.00	0.00	0.00	0.00
Dale	0.00	0.00	0.00	0.00	St Clair	0.00	0.00	0.00	0.00
Dallas	0.00	0.00	0.00	0.00	Shelby	0.00	666.25	666.25	9,592.47
De Kalb	0.00	0.00	0.00	0.00	Sumter	0.00	0.00	0.00	0.00
Elmore	0.00	0.00	0.00	0.00	Talladega	0.00	0.00	0.00	0.00
Escambia	0.00	0.00	0.00	0.00	Tallapoosa	0.00	0.00	0.00	0.00
Etowah	0.00	114.66	114.66	229.66	Tuscaloosa	0.00	0.00	0.00	0.00
Fayette	0.00	0.00	0.00	0.00	Walker	0.00	922.15	922.15	27,497.15
Franklin	0.00	0.00	0.00	0.00	Washington	0.00	75.54	75.54	3,176.97
Geneva	0.00	0.00	0.00	0.00	Wilcox	0.00	0.00	0.00	0.00
Greene	0.00	354.71	354.71	2,730.32	Winston	0.00	0.00	0.00	0.00
Hale	0.00	0.00	0.00	0.00	Total	0.00	8,256.99	8,256.99	124,973.98
Henry	0.00	0.00	0.00	0.00					
Houston	0.00	89.30	89.30	13,169.68					

Table 24. Thermoelectric-power freshwater withdrawals by hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

Hydrologic subregion and subbasin	WITHDRAWALS by source, in million gallons per day			Hydrologic subregion and subbasin	WITHDRAWALS by source, in million gallons per day		
	Groundwater	Surface water	Total		Groundwater	Surface water	Total
APALACHICOLA				03160106	0.00	0.00	0.00
03130002	0.00	0.00	0.00	03160107	0.00	0.00	0.00
03130003	0.00	0.00	0.00	03160108	0.00	0.00	0.00
03130004	0.00	89.30	89.30	03160109	0.00	922.15	922.15
03130012	0.00	0.00	0.00	03160110	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>89.30</i>	<i>89.30</i>	03160111	0.00	0.00	0.00
CHOCTAWHATCHEE-ESCAMBIA				03160112	0.00	0.00	0.00
03140103	0.00	0.00	0.00	03160113	0.00	354.71	354.71
03140104	0.00	0.00	0.00	03160201	0.00	0.00	0.00
03140106	0.00	0.00	0.00	03160202	0.00	0.00	0.00
03140107	0.00	0.00	0.00	03160203	0.00	75.54	75.54
03140201	0.00	0.00	0.00	03160204	0.00	989.29	989.29
03140202	0.00	0.00	0.00	03160205	0.00	0.00	0.00
03140203	0.00	0.00	0.00	<i>Subtotal</i>	<i>0.00</i>	<i>2,341.69</i>	<i>2,341.69</i>
03140301	0.00	1.74	1.74	PASCAGOULA			
03140302	0.00	0.00	0.00	03170002	0.00	0.00	0.00
03140303	0.00	0.00	0.00	03170003	0.00	0.00	0.00
03140304	0.00	0.00	0.00	03170008	0.00	0.00	0.00
03140305	0.00	0.00	0.00	03170009	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>1.74</i>	<i>1.74</i>	<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
ALABAMA				MIDDLE TENNESSEE-HIWASSEE			
03150105	0.00	0.00	0.00	06020001	0.00	0.00	0.00
03150106	0.00	114.66	114.66	<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
03150107	0.00	666.25	666.25	MIDDLE TENNESSEE-ELK			
03150108	0.00	0.00	0.00	06030001	0.00	1,044.42	1,044.42
03150109	0.00	0.00	0.00	06030002	0.00	2,730.80	2,730.80
03150110	0.00	0.00	0.00	06030003	0.00	0.00	0.00
03150201	0.00	5.83	5.83	06030004	0.00	0.00	0.00
03150202	0.00	0.00	0.00	06030005	0.00	1,262.30	1,262.30
03150203	0.00	0.00	0.00	06030006	0.00	0.00	0.00
03150204	0.00	0.00	0.00	<i>Subtotal</i>	<i>0.00</i>	<i>5,037.52</i>	<i>5,037.52</i>
<i>Subtotal</i>	<i>0.00</i>	<i>786.74</i>	<i>786.74</i>	Total		8,256.99	8,256.99
MOBILE-TOMBIGBEE							
03160101	0.00	0.00	0.00				
03160103	0.00	0.00	0.00				
03160105	0.00	0.00	0.00				

Table 25. Thermoelectric-power freshwater withdrawals by cooling type and by county, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

County	ONCE-THROUGH COOLING WITHDRAWALS by source, in million gallons per day			RECIRCULATING COOLING WITHDRAWALS by source, in million gallons per day		
	Groundwater	Surface water	Total	Groundwater	Surface water	Total
Autauga	0.00	0.00	0.00	0.00	5.83	5.83
Baldwin	0.00	0.00	0.00	0.00	0.00	0.00
Barbour	0.00	0.00	0.00	0.00	0.00	0.00
Bibb	0.00	0.00	0.00	0.00	0.00	0.00
Blount	0.00	0.00	0.00	0.00	0.00	0.00
Bullock	0.00	0.00	0.00	0.00	0.00	0.00
Butler	0.00	0.00	0.00	0.00	0.00	0.00
Calhoun	0.00	0.00	0.00	0.00	0.00	0.00
Chambers	0.00	0.00	0.00	0.00	0.00	0.00
Cherokee	0.00	0.00	0.00	0.00	0.00	0.00
Chilton	0.00	0.00	0.00	0.00	0.00	0.00
Choctaw	0.00	0.00	0.00	0.00	0.00	0.00
Clarke	0.00	0.00	0.00	0.00	0.00	0.00
Clay	0.00	0.00	0.00	0.00	0.00	0.00
Cleburne	0.00	0.00	0.00	0.00	0.00	0.00
Coffee	0.00	0.00	0.00	0.00	0.00	0.00
Colbert	0.00	1,262.30	1,262.30	0.00	0.00	0.00
Conecuh	0.00	0.00	0.00	0.00	0.00	0.00
Coosa	0.00	0.00	0.00	0.00	0.00	0.00
Covington	0.00	0.00	0.00	0.00	1.74	1.74
Crenshaw	0.00	0.00	0.00	0.00	0.00	0.00
Cullman	0.00	0.00	0.00	0.00	0.00	0.00
Dale	0.00	0.00	0.00	0.00	0.00	0.00
Dallas	0.00	0.00	0.00	0.00	0.00	0.00
De Kalb	0.00	0.00	0.00	0.00	0.00	0.00
Elmore	0.00	0.00	0.00	0.00	0.00	0.00
Escambia	0.00	0.00	0.00	0.00	0.00	0.00
Etowah	0.00	114.66	114.66	0.00	0.00	0.00
Fayette	0.00	0.00	0.00	0.00	0.00	0.00
Franklin	0.00	0.00	0.00	0.00	0.00	0.00
Geneva	0.00	0.00	0.00	0.00	0.00	0.00
Greene	0.00	354.71	354.71	0.00	0.00	0.00
Hale	0.00	0.00	0.00	0.00	0.00	0.00
Henry	0.00	0.00	0.00	0.00	0.00	0.00
Houston	0.00	0.00	0.00	0.00	89.30	89.30

Table 25. Thermoelectric-power freshwater withdrawals by cooling type and by county, Alabama, 2010 —Continued

[Values may not sum to totals because of independent rounding.]

County	ONCE-THROUGH COOLING WITHDRAWALS by source, in million gallons per day			RECIRCULATING COOLING WITHDRAWALS by source, in million gallons per day		
	Groundwater	Surface water	Total	Groundwater	Surface water	Total
Jackson	0.00	1,044.42	1,044.42	0.00	0.00	0.00
Jefferson	0.00	0.00	0.00	0.00	0.00	0.00
Lamar	0.00	0.00	0.00	0.00	0.00	0.00
Lauderdale	0.00	0.00	0.00	0.00	0.00	0.00
Lawrence	0.00	0.00	0.00	0.00	0.00	0.00
Lee	0.00	0.00	0.00	0.00	0.00	0.00
Limestone	0.00	2,724.37	2,724.37	0.00	0.00	0.00
Lowndes	0.00	0.00	0.00	0.00	0.00	0.00
Macon	0.00	0.00	0.00	0.00	0.00	0.00
Madison	0.00	0.00	0.00	0.00	0.00	0.00
Marengo	0.00	0.00	0.00	0.00	0.00	0.00
Marion	0.00	0.00	0.00	0.00	0.00	0.00
Marshall	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	989.29	989.29	0.00	0.00	0.00
Monroe	0.00	0.00	0.00	0.00	0.00	0.00
Montgomery	0.00	0.00	0.00	0.00	0.00	0.00
Morgan	0.00	0.00	0.00	0.00	6.43	6.43
Perry	0.00	0.00	0.00	0.00	0.00	0.00
Pickens	0.00	0.00	0.00	0.00	0.00	0.00
Pike	0.00	0.00	0.00	0.00	0.00	0.00
Randolph	0.00	0.00	0.00	0.00	0.00	0.00
Russell	0.00	0.00	0.00	0.00	0.00	0.00
St Clair	0.00	0.00	0.00	0.00	0.00	0.00
Shelby	0.00	666.22	666.22	0.00	0.03	0.03
Sumter	0.00	0.00	0.00	0.00	0.00	0.00
Talladega	0.00	0.00	0.00	0.00	0.00	0.00
Tallapoosa	0.00	0.00	0.00	0.00	0.00	0.00
Tuscaloosa	0.00	0.00	0.00	0.00	0.00	0.00
Walker	0.00	891.88	891.88	0.00	30.27	30.27
Washington	0.00	75.54	75.54	0.00	0.00	0.00
Wilcox	0.00	0.00	0.00	0.00	0.00	0.00
Winston	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	8,123.39	8,123.39	0.00	133.60	133.60

Table 26. Thermoelectric-power freshwater withdrawals by cooling type and by hydrologic subregion and subbasin, Alabama, 2010

[Values may not sum to totals because of independent rounding.]

Hydrologic subregion and subbasin	ONCE-THROUGH COOLING WITHDRAWALS by source, in million gallons per day			RECIRCULATING COOLING WITHDRAWALS by source, in million gallons per day		
	Groundwater	Surface water	Total	Groundwater	Surface water	Total
APALACHICOLA						
03130002	0.00	0.00	0.00	0.00	0.00	0.00
03130003	0.00	0.00	0.00	0.00	0.00	0.00
03130004	0.00	0.00	0.00	0.00	89.30	89.30
03130012	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>89.30</i>	<i>89.30</i>
CHOCTAWHATCHEE-ESCAMBIA						
03140103	0.00	0.00	0.00	0.00	0.00	0.00
03140104	0.00	0.00	0.00	0.00	0.00	0.00
03140106	0.00	0.00	0.00	0.00	0.00	0.00
03140107	0.00	0.00	0.00	0.00	0.00	0.00
03140201	0.00	0.00	0.00	0.00	0.00	0.00
03140202	0.00	0.00	0.00	0.00	0.00	0.00
03140203	0.00	0.00	0.00	0.00	0.00	0.00
03140301	0.00	0.00	0.00	0.00	1.74	1.74
03140302	0.00	0.00	0.00	0.00	0.00	0.00
03140303	0.00	0.00	0.00	0.00	0.00	0.00
03140304	0.00	0.00	0.00	0.00	0.00	0.00
03140305	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>1.74</i>	<i>1.74</i>
ALABAMA						
03150105	0.00	0.00	0.00	0.00	0.00	0.00
03150106	0.00	114.66	114.66	0.00	0.00	0.00
03150107	0.00	666.22	666.22	0.00	0.03	0.03
03150108	0.00	0.00	0.00	0.00	0.00	0.00
03150109	0.00	0.00	0.00	0.00	0.00	0.00
03150110	0.00	0.00	0.00	0.00	0.00	0.00
03150201	0.00	0.00	0.00	0.00	5.83	5.83
03150202	0.00	0.00	0.00	0.00	0.00	0.00
03150203	0.00	0.00	0.00	0.00	0.00	0.00
03150204	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>780.88</i>	<i>780.88</i>	<i>0.00</i>	<i>5.86</i>	<i>5.86</i>
MOBILE-TOMBIGBEE						
03160101	0.00	0.00	0.00	0.00	0.00	0.00
03160103	0.00	0.00	0.00	0.00	0.00	0.00
03160105	0.00	0.00	0.00	0.00	0.00	0.00

Table 26. Thermoelectric-power freshwater withdrawals by cooling type and by hydrologic subregion and subbasin, Alabama, 2010—Continued

[Values may not sum to totals because of independent rounding.]

Hydrologic subregion and subbasin	ONCE-THROUGH COOLING WITHDRAWALS by source, in million gallons per day			RECIRCULATING COOLING WITHDRAWALS by source, in million gallons per day		
	Groundwater	Surface water	Total	Groundwater	Surface water	Total
03160106	0.00	0.00	0.00	0.00	0.00	0.00
03160107	0.00	0.00	0.00	0.00	0.00	0.00
03160108	0.00	0.00	0.00	0.00	0.00	0.00
03160109	0.00	891.88	891.88	0.00	30.27	30.27
03160110	0.00	0.00	0.00	0.00	0.00	0.00
03160111	0.00	0.00	0.00	0.00	0.00	0.00
03160112	0.00	0.00	0.00	0.00	0.00	0.00
03160113	0.00	354.71	354.71	0.00	0.00	0.00
03160201	0.00	0.00	0.00	0.00	0.00	0.00
03160202	0.00	0.00	0.00	0.00	0.00	0.00
03160203	0.00	75.54	75.54	0.00	0.00	0.00
03160204	0.00	989.29	989.29	0.00	0.00	0.00
03160205	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>2,311.42</i>	<i>2,311.42</i>	<i>0.00</i>	<i>30.27</i>	<i>30.27</i>
PASCAGOULA						
03170002	0.00	0.00	0.00	0.00	0.00	0.00
03170003	0.00	0.00	0.00	0.00	0.00	0.00
03170008	0.00	0.00	0.00	0.00	0.00	0.00
03170009	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
MIDDLE TENNESSEE-HIWASSEE						
06020001	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
MIDDLE TENNESSEE-ELK						
06030001	0.00	1,044.42	1,044.42	0.00	0.00	0.00
06030002	0.00	2,724.37	2,724.37	0.00	6.43	6.43
06030003	0.00	0.00	0.00	0.00	0.00	0.00
06030004	0.00	0.00	0.00	0.00	0.00	0.00
06030005	0.00	1,262.30	1,262.30	0.00	0.00	0.00
06030006	0.00	0.00	0.00	0.00	0.00	0.00
<i>Subtotal</i>	<i>0.00</i>	<i>5,031.09</i>	<i>5,031.09</i>	<i>0.00</i>	<i>6.43</i>	<i>6.43</i>
Total	0.00	8,123.39	8,123.39	0.00	133.60	133.60

Comparison of 2005 and 2010 Water-Use Data



While some water use data was collected in earlier years (see figure 1), only after the establishment of OWR in 1993 did the Alabama water use program begin to gather detailed information on the county and basin level. Significant data was first collected and reported in 2000 but mining and livestock water use information was not obtained. Therefore, starting with the 2005 report and continuing with this report, OWR has analyzed detailed water use in each county and basin using similar methods to assess and describe water use around the state. Most of the data comes from the AWURP program, which is collected annually by OWR. Additional data is developed from surveys and other outside sources.

These consistent methods improve the overall quality of the data, and when applied in future years, will provide better understanding of the water use trends in Alabama and the factors affecting these trends. Socioeconomic and demographic factors, weather conditions, public policy, and technology are some factors that may influence water use changes.

2005 Errata

Since publication of the 2005 report, errors noted by OWR and others have been tracked and are included in the 2005-2010 comparison in this section. These reporting errors result in a 75 MGD increase in the 2005 Total Water Use. There were no changes in the self-supplied residential, mining, livestock, aquaculture, and thermoelectric categories. The changes were in Public Supply (+15 MGD), Industrial (+50 MGD), and Irrigation (+10 MGD). These errors amounted to less than 1 percent correction in the overall usage report of 2005.

Total Water Use

Overall, total water use in 2010 was slightly less than total use in 2005. Total water withdrawals decreased 0.4 percent in 2010 (9,998 MGD) compared to 2005 (10,033 MGD) (figure 1). All water use reported in 2010 was freshwater. Surface-water withdrawals decreased 0.2 percent, from 9,532 MGD in 2005 to 9,511 MGD in 2010. Groundwater withdrawals decreased 2.7 percent from 501 MGD in 2005 to 487 MGD in 2010.

Public-Supply and Residential Water Use

Total public-supply water withdrawals increased 2 percent from 816 MGD in 2005 to 833 MGD in 2010 (table 27). Changes in groundwater withdrawals ranged from a decrease of 15.03 MGD in Montgomery County to an increase of 4.93 MGD in Madison County (table 27). Changes in surface-water withdrawals ranged from a decrease of 10.84 MGD in Walker County to an increase of 15.82 MGD in Cullman County.

The higher 2010 statewide value of 833 MGD or a 15 MGD increase likely reflects the increased population. Differences in the withdrawal estimates from 2005 to 2010

also can be attributed to public water system expansions and the addition of new withdrawal sources.

Population served by public suppliers increased 5 percent from 4,036,470 in 2005 to 4,240,341 in 2010. The estimates of population served by county from 2005 to 2010 ranged from a decrease of 2,744 persons in Walker County to an increase of 34,479 persons in Madison County.

Self-supplied population was computed as the difference between total population and population served. The estimate for self-supplied population increased 3 percent from 521,338 in 2005 to 539,399 in 2010. The statewide residential self-supplied per capita use for 2010 was estimated to be approximately 70 gal/d based on the Alabama Public Water System Survey results from predominantly rural public water systems. This compares to a residential self-supplied per capita use of approximately 75 gal/d in 2005. As a result, the self-supplied residential withdrawals declined approximately 3 percent (from 39.12 MGD in 2005 to 37.97 MGD in 2010).

Irrigation and Aquaculture

Water withdrawals for irrigation increased approximately 18 percent from 171.69 MGD in 2005 to 201.67 MGD in 2010. Groundwater withdrawals increased less than 1 percent, and surface-water withdrawals increased about 34 percent. The nondisclosure of some of the irrigated acreage accounts for some of the changes in withdrawals. The changes in total irrigation water withdrawals by county ranged from a decrease of 2.53 MGD in Limestone County to an increase of 3.94 MGD in Baldwin County.

Total irrigated acreage from 2005 to 2010 increased about 25 percent from 135,800 acres to 169,240 acres. Some of this increase may be attributed to limitations in the availability of the undisclosed NASS data and differences in methodology. The changes in irrigated acreage ranged from a reduction of

3,580 acres in Geneva County to an increase of 7,580 acres in Baldwin County.

Aquaculture withdrawals were 74.89 MGD in 2005 and 59.10 MGD in 2010. The change in water use could be a result of the reduction in catfish farms that sold aquaculture from 2002 to 2007 (USDA, 2002 and 2007).

Industrial

In 2005, 66 self-supplied industries reported withdrawals to the AWURP compared with 74 industries in 2010. Although the number of industries increased in 2010, the amount of water withdrawals decreased 6 percent from 600 MGD in 2005 to 562 MGD in 2010 (table 27). Groundwater withdrawals were virtually the same in 2010 (27.26 MGD) as in 2005 (27.62 MGD). Surface-water withdrawals were 6 percent less in 2010 (535 MGD) than in 2005 (572 MGD). Several industries reported reduced withdrawals from 2005 to 2010. Possible reasons for reduced water withdrawals include reduced production, increased water conservation, or improved metering and reporting. The changes in total self-supplied industrial withdrawals by county ranged from a decrease of about 30 MGD in Talladega County to an increase of 13.32 MGD in Colbert County.

Thermoelectric Power

Thermoelectric-power generation requires a large amount of water for cooling purposes. The amount of water depends on the amount of power generated, cooling-system type, and for once-through cooling, the temperature of the receiving stream at the time of the planned cooling-water discharge. In 2005, total thermoelectric-power water withdrawals were 8,274 MGD compared with 8,257 MGD in 2010, which was a decrease of 0.2 percent. No groundwater withdrawals were reported in 2010.

Table 27a. Comparison of 2005 and 2010 public-supply water use and self-supplied industrial water use, Alabama

[Values may not sum to total estimated use(s) because of rounding. A negative number means less water was used in 2010 than 2005.]

PUBLIC SUPPLY									
GROUNDWATER Million gallons per day					SURFACE WATER Million gallons per day				
County	2005	2010	2010 and 2005 difference	Percent change	County	2005	2010	2010 and 2005 difference	Percent change
All counties	277.2	280.43	3.23	1		539.22	552.16	12.94	2
Increase greater than 1 million gallons per day (MGD)									
Madison	23.71	28.64	4.93	21	Cullman	14.75	30.57	15.82	107
Mobile	11.37	15.72	4.35	38	Blount	47.13	52.16	5.03	11
Talladega	6.36	9.52	3.16	50	Mobile	65.45	70.25	4.80	7
Autauga	3.18	5.08	1.90	60	Jefferson	63.30	67.42	4.12	7
Elmore	2.17	3.72	1.55	71	Morgan	30.42	33.38	2.96	10
St Clair	8.13	9.62	1.49	18	Shelby	0.00	2.63	2.63	N/A
Baldwin	21.59	22.97	1.38	6	Marshall	21.17	22.28	1.11	5
Marshall	2.98	4.35	1.37	46					
Calhoun	19.75	20.84	1.09	6					
Decrease greater than 1 million gallons per day (MGD)									
Montgomery	28.90	13.87	-15.03	-52	Walker	46.43	35.59	-10.84	-23
Dale	8.78	6.85	-1.93	-22	Talladega	12.12	9.52	-4.1	-21
Limestone	4.55	2.71	-1.84	-40	Montgomery	22.19	19.47	-2.72	-12
Monroe	3.85	2.65	-1.20	-31	De Kalb	8.57	6.30	-2.27	-26
Hale	2.88	1.71	-1.17	-41	Tallapoosa	12.55	10.38	-2.17	-17
					Lauderdale	12.79	10.91	-1.88	-1
Total public supply 2005					816.42				
Total public supply 2010					832.59				
2010 and 2005 difference (MGD)					16.17				
2010 and 2005 difference (percent)					2				

Table 27b. Comparison of 2005 and 2010 public-supply water use and self-supplied industrial water use, Alabama

[Values may not sum to total estimated use(s) because of rounding. A negative number means less water was used in 2010 than 2005.]

SELF-SUPPLIED INDUSTRIAL									
GROUNDWATER Million gallons per day					SURFACE WATER Million gallons per day				
County	2005	2010	2010 and 2005 difference	Percent change	County	2005	2010	2010 and 2005 difference	Percent difference
ALL COUNTIES									
Increase greater than 0.5 million gallons per day (MGD)									
Coffee	0.86	2.22	1.36	158	Colbert	55.57	69.54	13.97	25
Mobile	5.67	6.90	1.23	22	Lawrence	57.18	60.11	2.93	5
Washington	5.33	6.16	0.83	16	Escambia	32.07	33.66	1.59	5
					Clarke	19.08	20.22	1.14	6
					Shelby	3.50	4.45	0.95	27
					Sumter	1.22	2.03	0.81	66
					Mobile	0.00	0.70	0.70	N/A
					Washington	4.31	4.87	0.56	13
					Autauga	30.63	31.13	0.50	2
Decrease greater than 0.5 million gallons per day (MGD)									
Morgan	1.28	0.00	-1.28	N/A	Talladega	53.36	24.67	-28.69	-54
Talladega	1.26	0.00	-1.26	N/A	Morgan	89.36	78.02	-11.34	-13
Marengo	1.00	0.20	-0.8	-80	Monroe	54.61	46.42	-8.19	-15
Cleburne	0.71	0.00	-0.71	N/A	Choctaw	47.41	40.76	-6.65	-14
Colbert	0.87	0.22	-0.65	-75	Lee	2.23	0.00	-2.23	N/A
					Chambers	6.12	0.00	-2.16	N/A
					Wilcox	19.33	18.31	-1.02	-5
					Etowah	9.87	9.21	-0.66	-7
Total self-supplied industrial 2005				600.14					
Total self-supplied industrial 2010				562.23					
2010 and 2005 difference (MGD)				-37.91					
2010 and 2005 difference (percent)				-6.3					

Summary

Water use by source of supply and eight categories of use—public supply, self-supplied residential, irrigation, livestock, aquaculture, self-supplied industrial, mining, and thermoelectric power—were estimated for the State of Alabama for 2010. Site-specific data were used as a basis for estimates for public supply, public-supplied deliveries, self-supplied industrial, mining, thermoelectric power, and golf course, nursery, and sod irrigation. Aggregated county-level data were used as a basis for estimates for self-supplied residential, crop irrigation, livestock, and aquaculture.

Total water use was approximately 9,998 MGD during 2010. Surface water was the source for approximately 95 percent of the total withdrawals (9,511 MGD) and the remaining 5 percent (487 MGD) was from groundwater. More surface water than groundwater was used in all categories except aquaculture, mining, and self-supplied residential. Estimated water withdrawals by category and in descending order were thermoelectric power, 8,257 MGD; public supply, 833 MGD; self-supplied industrial, 562 MGD; irrigation, 202 MGD; aquaculture, 59 MGD; self-supplied residential, 38 MGD; livestock, 26 MGD; and mining, 21 MGD.²

A comparison of gallons per day per person of the total, public supply, public-supplied residential, and self-supplied residential water use shows that for water used to generate electricity, support industrial and agricultural activities, and provide drinking water (9,998 MGD), per capita use was 2,092 gal/d for the estimated 4.78 million residents in Alabama. For the public-supplied water delivered to the residential, industrial and commercial sectors, and public use and losses (833 MGD), per capita use was 196 gal/d for the 4.24 million residents served by public supply. For the public-supplied residential deliveries (328 MGD), per capita use was 77 gal/d; and for self-supplied residential (38 MGD), per capita use was 70 gal/d for the 0.54 million residents with private wells.

Thermoelectric-power plants located in all but two of the seven hydrologic subregions in Alabama—the Pascagoula and the Tennessee-Hiwassee—withdrew 83 percent (8,257 MGD) of the total water withdrawn to generate 125,000 net gigawatt-hours of energy. Surface water provided all of the water. Approximately 98 percent of the thermoelectric-power withdrawals were used for once-through cooling. The percent consumptive use from once-through cooling generating units ranged from zero to nearly 7 percent (median, 0.1 percent) compared to recirculating-cooling generating units that have a consumptive use ranging from 30 to 65 percent (median, 44 percent). A comparison of a once-through cooling plant to a recirculating-cooling plant in Alabama shows that a once-through cooling unit typically uses about 60 gallons of water to produce 1 kilowatt-hour of electricity; a recirculating-cooling unit typically uses about 20 gallons of water to produce 1 kilowatt-hour of electricity.

Public-supply withdrawals were 8 percent of total freshwater withdrawals and 48 percent of total withdrawals for all categories excluding thermoelectric power. Surface-water sources provided 66 percent of the water, and groundwater provided the remaining 34 percent. Public supply accounted for 57 percent of the total groundwater withdrawals in the State. Public-supply deliveries to residential customers were 39 percent of total public-supply withdrawals,

² Values may not sum to total estimated use(s) or acreage because of rounding.

or about 328 MGD; combined industrial and commercial deliveries were 47 percent, or about 393 MGD; and public use and losses accounted for the remaining 13 percent, or about 111 MGD. Mobile, Jefferson, Madison, Blount, and Walker Counties accounted for about 39 percent of public-supply withdrawals and 34 percent of the population served.

Total industrial water use was 955 MGD in 2010. Self-supplied industrial withdrawals were 6 percent of total withdrawals (562 MGD) and 33 percent of total withdrawals excluding thermoelectric power. Surface water was the source for 95 percent of the self-supplied industrial water withdrawals. Statewide, combined public-supplied industrial and commercial deliveries were 393 MGD. Pulp, paper, and paperboard mills accounted for the largest self-supplied industrial surface-water withdrawals (336 MGD) and the largest self-supplied industrial groundwater withdrawals (12 MGD). The largest withdrawals occurred in Morgan, Colbert, Lawrence, Monroe, and Choctaw Counties with withdrawals that were more than 40 MGD for each county. Withdrawals in these counties were 53 percent of the total self-supplied industrial withdrawals.

Irrigation withdrawals were about 2 percent of total withdrawals and about 12 percent of total withdrawals for all categories excluding thermoelectric power. More than half of the water (58%) was from surface water. Baldwin County withdrew 24 percent (48 MGD) of the irrigation water, primarily for nursery stock and sod. Most of that water (37 MGD) was from groundwater. About 169,240 acres of crops (food and feed crops, nursery stock and sod) and golf courses were irrigated in 2010. Nursery stock and sod accounted for 21 percent of the irrigated crop acreage (29,464 of the 142,340 acres) statewide. Golf courses applied about 41 MGD to 26,900 acres in 2010. The statewide average application rate was 1.34 acre-feet per acre per year. The highest application rate, 3.74 acre-feet per acre per year, was for nursery stock.

Aquaculture withdrawals were less than 1 percent (59 MGD) of the total freshwater withdrawals and were about 3 percent of

the total freshwater withdrawals excluding thermoelectric power. Groundwater provided more than half (54%) of the water used. All aquaculture withdrawals were considered fresh in 2010, although some ponds were filled with low-to-high salinity groundwater.

Self-supplied residential withdrawals also were less than 1 percent (38 MGD) of total water withdrawals, but about 2 percent of total water withdrawals for all categories excluding thermoelectric power. All of the water withdrawn for self-supplied residential purposes was from groundwater. The largest self-supplied residential withdrawals were in Baldwin and Mobile Counties. These two counties represented about 11 percent of the total self-supplied residential withdrawals in Alabama and 12 percent of the self-supplied residential population.

Livestock withdrawals were less than 1 percent (27 MGD) of the total freshwater withdrawals and were nearly 2 percent of the total freshwater withdrawals excluding thermoelectric power. Surface water was the source for more than half (56%) of the water used. Two of the seven hydrologic subregions—the Mobile–Tombigbee (7.2 MGD) and the Alabama (6.5 MGD)—accounted for 52 percent of the livestock withdrawals.

Similarly, mining withdrawals were less than 1 percent of total water withdrawals (21 MGD) and about 1 percent of total water withdrawals for all categories excluding thermoelectric power. Groundwater was the source of about 61 percent of mining withdrawals. All mining withdrawals were considered fresh in 2010, although some low-salinity groundwater has been tapped in parts of the State.

Most of the large water withdrawals were concentrated in a few counties. Limestone, Jackson, Colbert, and Mobile Counties accounted for 63 percent of the total withdrawals—primarily to meet the cooling needs at thermoelectric-power plants. Excluding thermoelectric power, the largest withdrawals by county occurred in Morgan, Mobile, Jefferson, Colbert, and Madison Counties. Water use was compiled by hydrologic subbasin for all categories except aquaculture,

mining, and self-supplied residential. As a result of estimating fewer categories, total withdrawals by subbasin were 9,880 MGD compared to total withdrawals by county. The Middle Tennessee–Elk subregion accounted for approximately 55 percent (5,476 MGD) of the estimated total withdrawals by subregion. About 92 percent of that water use was for thermoelectric power—all from surface water. Excluding thermoelectric power, the Middle Tennessee–Elk subregion accounted for 27 percent of the water withdrawals statewide. About 51 percent of the nonpower withdrawals in the Middle Tennessee–Elk subbasin were for self-supplied industrial use.

Overall, total water use in 2010 was slightly less than total use in 2005. Total water withdrawals decreased 0.4 percent from 2005 to 2010 (from 10,033 MGD to 9,998 MGD, respectively). Surface-water withdrawals were about 0.2 percent less in 2010 than in 2005 (9,532 MGD to 9,511 MGD, respectively). Groundwater withdrawals decreased about 3 percent from 2005 to 2010 (from 501 MGD to 487 MGD, respectively). By category, withdrawals for

- Public supply increased 2 percent from 816 MGD in 2005 to 833 MGD in 2010.
- Self-supplied residential declined about 3 percent from 39.12 MGD in 2005 to 37.97 MGD in 2010.
- Irrigation increased about 18 percent from 171.7 MGD in 2005 to 201.67 MGD in 2010. Over the same period, total irrigated acreage increased about 25 percent from 135,800 acres in 2005 to 169,200 acres in 2010.
- Aquaculture decreased 21 percent from 74.9 MGD in 2005 to 59.1 MGD in 2010.
- Livestock decreased 6 percent from 28.1 MGD in 2005 to 26.5 MGD in 2010.
- Self-supplied industrial declined 6 percent from 600 MGD in 2005 to 562 MGD in 2010.
- Mining decreased 25 percent from 27.8 MGD in 2005 to 20.9 MGD in 2010.
- Thermoelectric power decreased 0.2 percent from 8,274 MGD in 2005 to 8,257 MGD in 2010.

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Glossary

The following terms pertain to or are referenced in the text.

Alabama Water Use Reporting Program all public water systems as well as non-public and irrigation water users who have the capacity to withdraw 100,000 gallons per day or more of surface or groundwater in Alabama are required to register with the Alabama Office of Water Resources. A Certificate of Use is issued to each user who is then required to report their usage annually. *See also* eWater.

aggregated data summarized values for a specific data element either by spatial area or category of use.

aquaculture water use water use associated with the farming of organisms, such as finfish and shellfish, that live in water and offstream water use associated with fish hatcheries. *See also* fish farm water use, fish hatchery water use, and offstream use.

census block group U.S. Census Bureau census accounting unit that generally contains between 600 and 3,000 people, with an optimum size of 1,500 people (U.S. Census, 2009).

choropleth map a data map that presents data values as discrete areal ranges.

closed cycle cooling cooling process where water is withdrawn from a source, circulated through heat exchangers, then cooled, and recycled. Subsequent water withdrawals are used to replace water lost to evaporation, blowdown, drift, and leakage, and accordingly results in a much smaller return flow than once-through cooling. Related terms include closed-loop cooling and contact cooling. *See also* closed-loop cooling, cooling system, cooling-system type, industrial water use, and thermoelectric-power water use.

commercial water use water for motels, hotels, restaurants, office buildings, other commercial facilities, and military and nonmilitary institutions. Water may be obtained from a public supplier or may be self-supplied. *See also* nonresidential water use, public-supply deliveries, public-supply water use, and offstream use.

community water system water system furnishing water year-round to at least 25 people or having a minimum of 15 connections. *See also* public-supply deliveries, non-community water system, public-supply water use, and public supplier.

consumptive use the part of water withdrawn that is evaporated, transpired, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the environment. Consumptive use also is referred to as water consumed.

conveyance loss water that is lost in transit from a pipe, canal, conduit, or ditch by leakage or evaporation. Generally, the water is not available for further use; however, leakage from an irrigation ditch, for example, may percolate to a groundwater source and be available for further use. *See also* irrigation water use.

consumptive crop irrigation requirement the amount of water, in addition to rainfall, that must be applied to meet a crop's evapotranspiration needs without significant reduction in yield (Smajstrla and Zazueta, 2002). *See also* irrigation water use.

cooling system an equipment system that provides water for cooling purposes, such as for condensers at power plants or at factories, and includes water intakes and outlets, cooling

towers, and ponds, pumps, and pipes. *See also* cooling-system type, industrial water use, once-through cooling, recirculating cooling and thermoelectric-power water use.

cooling-system type once-through or recirculating are cooling system types. *See also* cooling system, industrial water use, once-through cooling, recirculating cooling, and thermoelectric-power water use.

delivery-release the amount of water delivered to the point of use and the amount released after use; the difference between these amounts is usually the same as consumptive use. *See also* consumptive use.

domestic water use *See* total residential water use.

eWater the client server application developed and maintained by the Alabama Office of Water Resources to support the Alabama Water Use Reporting Program. *See also* Alabama Water Use Reporting Program

fish farm water use water used for the production of finfish and shellfish under controlled feeding, sanitation, and harvesting procedures for commercial purposes. Water use by fish farms is classified in the aquaculture category. *See also* aquaculture water use and fish hatchery water use.

fish hatchery water use water used for raising fish for later release and in association with the operation of fish hatcheries or fishing preserves. Fish hatchery water use is classified in the aquaculture category. *See also* aquaculture water use and fish farm water use.

freshwater water that contains less than 1,000 milligrams per liter (mg/L) of dissolved salts; generally, more than 500 mg/L of dissolved solids is undesirable for drinking and for many industrial uses. *See also* saline water.

geographic information system a computer system designed to collect, manage, manipulate, analyze, and display spatially referenced data. A GIS includes both attribute and geospatial data.

gross per capita use total amount of water withdrawn for all uses including generating electricity and residential, commercial, industrial, and agricultural purposes divided by the total population. *See also* gross public-supply per capita use; public-supplied residential per capita use; residential per capita use; and self-supplied residential per capita use.

gross public-supply per capita use total amount of water billed by a public supplier for all uses including generating electricity, residential, commercial, industrial, public, and

agricultural purposes, and losses divided by the number of people served by a public supplier. This statistic normalizes deliveries from a public supplier by population served and can be used to compare the relative size of nonresidential deliveries among public suppliers. A high statistical value could indicate large deliveries to the nonresidential sector. *See also* gross per capita use, public-supplied residential per capita use; residential per capita use, and self-supplied residential per capita use.

industrial water use water used for fabrication, processing, washing, and cooling and includes such industries as chemical and allied products, food, mining, paper and allied products, petroleum refining, and steel. *See also* cooling system, cooling-system type, mining water use, public-supply deliveries, nonresidential water use, offshore use, public-supply water use, thermoelectric-power water use, and total industrial water use.

instream use water that is used, but not withdrawn, from a surface-water source for such purposes as hydroelectric-power generation, navigation, water-quality improvement, fish propagation, and recreation. *See also* offshore use and water use.

irrigation water use water that is applied by an irrigation system to assist in the growing of crops and pastures or to maintain vegetative growth in recreational lands such as parks and golf courses. Irrigation includes water that is applied for pre-irrigation, frost protection, chemical application, weed control, field preparation, crop cooling, harvesting, dust suppression, the leaching of salts from the root zone, and water lost in conveyance. *See also* conveyance loss, microirrigation system, sprinkler irrigation system, surface irrigation system, and offshore use.

livestock water use water for livestock watering, feedlots, dairy operations, and other on-farm needs. Types of livestock include dairy cows and heifers, beef cattle and calves, sheep and lambs, goats, hogs and pigs, horses and poultry. *See also* offshore use.

microirrigation system an irrigation system that wets only a discrete portion of the soil surface in the vicinity of the plant by means of applicators, such as orifices, emitters, porous tubing, and perforated pipe operated under low pressure. The applicators can be placed on or below the surface of the ground or can be suspended from supports. *See also* irrigation water use, sprinkler irrigation system, and surface irrigation system.

mining water use water use for the extraction of naturally occurring minerals including solids, such as coal, sand, gravel, and other ores; liquids, such as crude petroleum; and gases, such as natural gas. Also includes uses associated with quarrying, milling, and other preparations customarily done at the mine site or as part of a mining activity. Does not include water associated with dewatering of the aquifer that is not put to beneficial use. Also does not include water used in processing, such as smelting, refining petroleum, or slurry pipeline operations. These processing uses are included in industrial water use. *See also* industrial water use and offstream use.

monthly operational report monthly data report of average daily water withdrawals or water purchases submitted by each public supplier to the Alabama Department of Environmental Management.

North American Industry Classification System The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

non-community water system water system furnishing water to fewer than 25 people or fewer than 15 connections, but not year-round. *See also* community water supplier, public-supply deliveries, public-supply water use, and public supplier.

non-public a water-use classification in the Alabama Water Use Reporting Program system for a water-using entity that is neither a public supplier nor an irrigator.

nonresidential water use water delivered from a public supplier to commercial, industrial or thermoelectric power customers. *See also* commercial water use, industrial water use, public-supply water use, and residential water use.

offstream use water withdrawn or diverted from a groundwater or surface-water source for aquaculture water use, commercial water use, irrigation water use, livestock water use, mining water use, public-supply water use, industrial water use, residential water use, thermoelectric power, and other uses. *See also* entries for each of the previously mentioned uses and self-supplied water use.

once-through cooling process in which the water is withdrawn from a source, circulated through the heat exchangers, and then returned to a body of water at a higher temperature. Once-through cooling systems may be referred to as open-loop

systems. *See also* cooling system, industrial water use, recirculating cooling, and thermoelectric-power water use.

public-supplied residential per capita use total amount of public-supply withdrawals for residential, commercial, industrial, and thermoelectric-power purposes and public use and losses divided by the associated population served by a public supply. *See also* gross per capita use, gross public supply per capita use, residential per capita use, and self-supplied residential per capita use.

public supplier *See* community water system.

public-supply deliveries amount of water delivered from a public supplier to users for residential, commercial, industrial, thermoelectric-power, or public-use purposes. *See also* commercial water use, industrial water use, public-supply water use, public water use, residential water use, and thermoelectric-power water use.

public-supply water use water withdrawn, treated, and distributed by public suppliers. Public suppliers provide water for a variety of uses such as residential, commercial, industrial, thermoelectric power, and public water use. *See also* commercial water use, domestic water use, industrial water use, public-supply deliveries, public water use, thermoelectric-power water use, total industrial water use, and offstream use.

public water system *See* community water system or public supplier.

public use and losses water supplied from a public supplier and used for such purposes as firefighting, street washing, flushing of water lines, and maintaining municipal parks and swimming pools. *See also* public-supply deliveries and public-supply water use.

reclaimed wastewater wastewater treatment plant effluent that has been diverted for beneficial use before it reaches a natural waterway or aquifer. *See also* water use.

residential per capita use public-supplied residential deliveries plus self-supplied residential withdrawals divided by total population. *See also* gross per capita use, gross public-supply per capita use, public-supplied residential per capita use, and self-supplied residential per capita use.

residential water use water used for indoor household purposes, such as drinking, preparing food, bathing, washing clothes and dishes, and flushing toilets and outdoor purposes, such as watering lawns and gardens. Residential water use is the combined public-supplied residential deliveries and

self-supplied residential withdrawals. Residential water use is the same as domestic water use, but is the preferred term for this report. *See also* domestic water use, public-supply deliveries, public-supply water use, and offstream use.

return flow water that reaches a groundwater or surface-water source after release from the point of use, and thus becomes available for further use. *See also* water use.

saline water water that contains 1,000 milligrams per liter or more of dissolved salts. *See also* freshwater.

self-supplied residential per capita use total amount of water withdrawn for self-supplied residential purposes divided by the associated self-supplied residential population. *See also* gross per capita use, gross public-supply per capita use, public-supplied residential per capita use, and residential per capita use.

self-supplied water use water withdrawn from a groundwater or surface-water source by a user rather than being obtained from a public supply. *See also* offstream use.

site-specific data data for an individual water-using entity.

sprinkler irrigation system an irrigation system in which water is applied by means of perforated pipes or nozzles operated under pressure so as to form a spray pattern. *See also* irrigation water use, microirrigation system, and surface irrigation system.

surface irrigation system irrigation by means of flood, furrow, or gravity. Flood irrigation is the application of irrigation water in which the entire soil surface is covered by ponded water. Furrow is a partial surface-flooding method of irrigation normally used with clean-tilled crops in which water is applied in furrows or rows of sufficient capacity to contain the design irrigation stream. Gravity is an irrigation method in which water is not pumped, but flows in ditches or pipes and is distributed by gravity. *See also* irrigation water use, microirrigation system, and sprinkler irrigation system.

thermoelectric-power water use water used in the process of generating electricity with steam-driven turbine generators. The total water use is a combination of public-supply deliveries to thermoelectric-power plants and self-supplied thermoelectric-power withdrawals. For this report, thermoelectric-power water use refers only to self-supplied

thermoelectric-power withdrawals. *See also* cooling system, cooling-system type, once-through cooling, public-supply water use, recirculating cooling, and offstream use.

total industrial water use self-supplied industrial withdrawals plus public-supplied industrial and commercial deliveries. *See also* public-supply water use.

total residential water use self-supplied residential withdrawals plus public-supplied residential deliveries. *See also* public-supply water use.

wastewater-treatment return flow water returned to the hydrologic system by wastewater-treatment facilities. *See also* water use.

water transfer artificial conveyance of water from one area to another.

water use (1) in a restrictive sense, the term refers to water that is used for a specific purpose, such as for residential use, irrigation, thermoelectric-power cooling, or industrial processing. In this report, the quantity of water use for a specific category is the water withdrawal by that category of users, and public supply is considered a category of water use. (2) More broadly, water use pertains to the interaction of humans with and their influence on the hydrologic cycle and includes elements such as water withdrawal, delivery, consumptive use, wastewater release, reclaimed wastewater, return flow, and instream use. *See also* offstream use and instream use.

water-use transaction a water-use activity that is a water withdrawal, water delivery, water release, return flow, or water transfer. *See also* delivery-release, return flow, wastewater-treatment return flow, water transfer, or water withdrawal.

water withdrawal water removed from the groundwater or diverted from a surface-water source for use. *See also* offstream use and self-supplied water use.

watt-hour (Wh) an electrical energy unit of measure equal to 1 watt of power supplied to, or taken from, an electric circuit for 1 hour.

Appendix A.

Alabama Water Use by County

The following one-page summaries of water-use information by county present withdrawals by water-use category, public supplier, and major North American Industry Classification System (NAICS) groups, a pie chart of the distribution of total withdrawals by water-use category, and a map that shows the location of the county within the State. See the first example on the following county page for Autauga. Also listed are totals for population and population served by public supply.

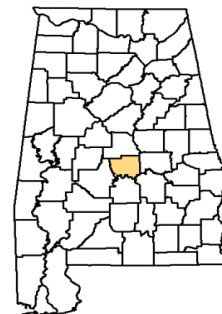
In each of the county summaries, a table lists average daily withdrawals for the categories of use. The withdrawals are totaled by source of water used (surface water [SW] or groundwater [GW]) by category, and the percentage of use is indicated.

Each public supplier is listed by the county in which the withdrawal occurs; therefore, a public supplier may be listed in more than one county depending on the location of its water sources. For example, Birmingham Water Works Board withdraws surface water from Blount, Cullman, Jefferson, and Walker Counties, and is therefore listed on each of the corresponding county pages.

In the tables for category, public supplier, and NAICS groupings, a value of 0.00 MGD was used if the withdrawal was less than 0.01 MGD. As a result, some totaled withdrawals from these tables may be less than the totals shown for public supply or industry in the water-use-category table. Numbers may not sum to total withdrawals because of rounding. "Residential" refers to self-supplied residential withdrawals.

A table of withdrawals by NAICS code lists withdrawals by groundwater (GW) or surface water (SW). The NAICS groupings include the water-use categories of commercial, industrial, and thermoelectric power.

AUTAUGA

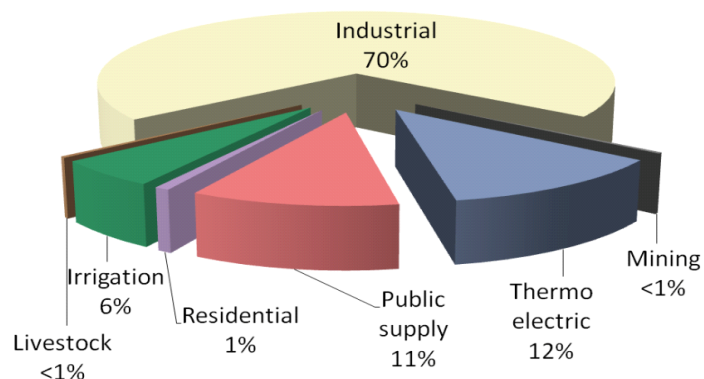


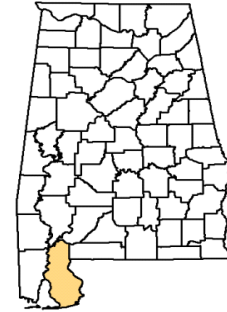
Population 54,571
Pop served by public supply 48,220

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	5.08	0.00	5.08	Autauga County Water	0.59	0.00	0.59
	100%	0%		Autaugaville Water Works	0.15	0.00	0.15
Residential	0.37	0.00	0.37	Billingsley Water System	0.11	0.00	0.11
	100%	0%		Marbury Water System	0.04	0.00	0.04
Irrigation	2.61	1.00	3.61	Prattville Water Works Board	3.87	0.00	3.87
	72%	28%		West Autauga Water Authority	0.32	0.00	0.32
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.06	0.09	0.15				
	40%	60%					
Industrial	2.00	31.13	33.13				
	6%	94%					
Mining	0.09	0.04	0.13				
	69%	31%					
Thermoelectric	0.00	5.83	5.83				
	0%	100%					
Totals	10.21	38.09	48.30				
	21%	79%					

Withdrawals by North American Industry Classification , in MGD

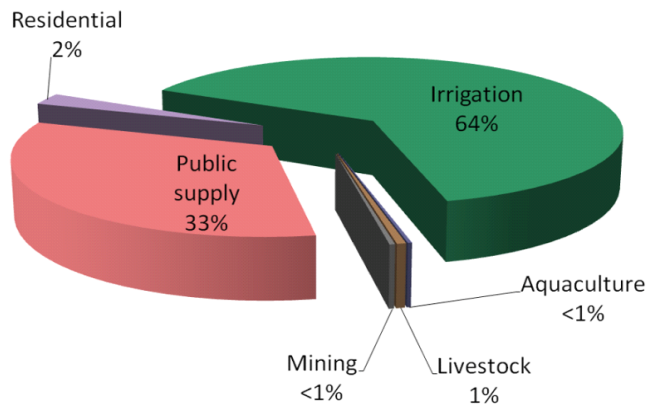
Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	5.83	5.83
Pulp, Paper, and Paperboard Mills	2.00	31.13	33.13



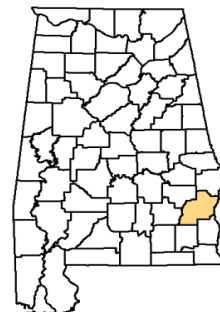
BALDWIN

Population 182,265
Pop served by public supply 153,460

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	22.97	0.00	22.97	Belforest Water System	0.58	0.00	0.58
	100%	0%		Community Action Agency - Baldwin, Escambia, Clarke, Monroe, Conecuh	0.10	0.00	0.10
Residential	1.71	0.00	1.71	Daphne Utilities Board	3.22	0.00	3.22
	100%	0%		East Central Baldwin Water	0.31	0.00	0.31
Irrigation	37.32	10.44	47.76	Elberta Water System	0.07	0.00	0.07
	78%	22%		Fairhope	4.13	0.00	4.13
Aquaculture	0.00	0.16	0.16	Gulf Shores Utilities Board	2.98	0.00	2.98
	0%	100%		Loxley	0.60	0.00	0.60
Livestock	0.16	0.19	0.35	North Baldwin Utilities	3.13	0.00	3.13
	46%	54%		Orange Beach Water, Sewer & Fire Protection	3.01	0.00	3.01
Industrial	0.00	0.00	0.00	Perdido Bay Water, Sewer & Fire Protection District	0.47	0.00	0.47
	0%	0%		Riviera Utilities	2.89	0.00	2.89
Mining	0.21	0	0.21	Robertsdale	0.86	0.00	0.86
	100%	0%		Silverhill	0.13	0.00	0.13
Thermoelectric	0.00	0.00	0.00	Spanish Fort Water System	0.39	0.00	0.39
	0%	0%		Summerdale Water Department	0.10	0.00	0.10
Totals	62.37	10.79	73.16	Withdrawals by North American Industry Classification , in MGD			
	85%	15%		Industry Group	GW	SW	Total



BARBOUR



Population 27,457
Pop served by public supply 25,560

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

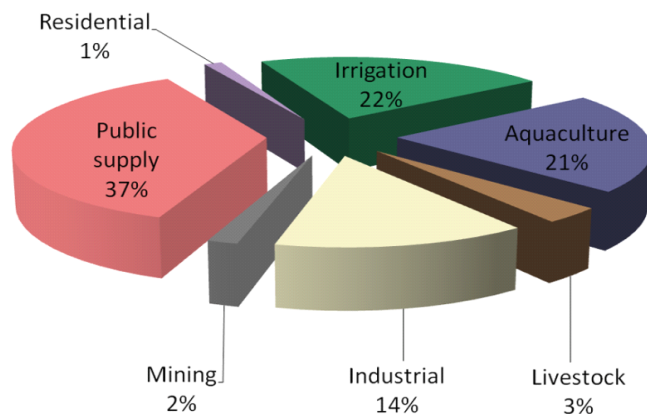
Category	GW	SW	Totals
Public Supply	4.15 100%	0.00 0%	4.15
Residential	0.15 100%	0.00 0%	0.15
Irrigation	0.57 21%	2.09 79%	2.66
Aquaculture	0.09 4%	2.34 96%	2.43
Livestock	0.15 39%	0.23 61%	0.38
Industrial	1.57 100%	0.00 0%	1.57
Mining	0.13 68%	0.06 32%	0.19
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	6.81 59%	4.72 41%	11.53

Withdrawals by Public Supplier, in MGD

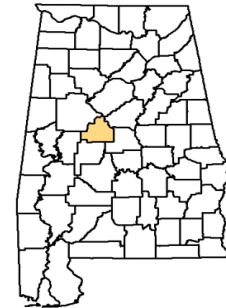
System Name	GW	SW	Total
Baker Hill Water Authority	0.58	0.00	0.58
Blue Springs	0.07	0.00	0.07
Clayton Water Works and Sewer Board	0.50	0.00	0.50
Clio Water Works	0.51	0.00	0.51
Cowikee Water	0.12	0.00	0.12
Eufaula Water Works and Sewer Board	2.09	0.00	2.09
Louisville Water Works	0.19	0.00	0.19
West Barbour County Water Authority	0.09	0.00	0.09

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Animal Slaughtering and Processing	1.57	0.00	1.57



BIBB

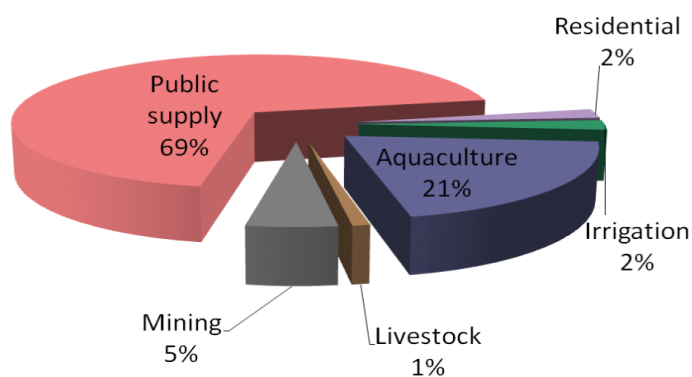


Population 22,915
Pop served by public supply 21,280

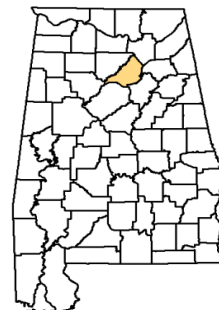
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	4.90	0.00	4.90	Brent Utilities Board	1.14	0.00	1.14
	100%	0%		Citizens' Water Service, Inc.	1.20	0.00	1.20
				City of Centreville Water & Sewer Board	0.84	0.00	0.84
Residential	0.15	0.00	0.15	Green Pond Water System Inc	0.77	0.00	0.77
	100%	0%		Warrior River Water Authority	0.37	0.00	0.37
Irrigation	0.10	0.13	0.23	West Blocton Water Works	0.58	0.00	0.58
	43%	57%					
Aquaculture	0.00	1.45	1.45				
	0%	100%					
Livestock	0.03	0.04	0.07				
	43%	57%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.36	0	0.36				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	5.54	1.62	7.16				
	77%	23%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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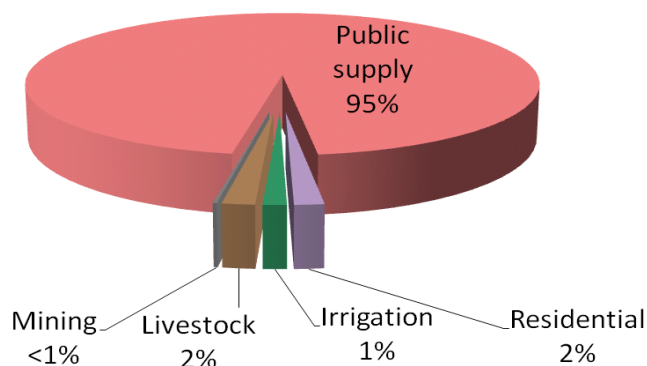
BLOUNT

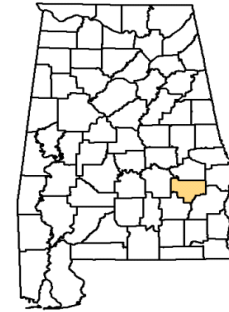


Population 57,322
Pop served by public supply 44,460

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.44	52.16	54.60	Allgood Water Works	0.00	0.07	0.07
	4%	96%		Altoona Water & Sewer	0.15	0.00	0.15
Residential	0.89	0.00	0.89	Birmingham WWB	0.00	49.42	49.42
	100%	0%		Blount County Water Authority	0.24	1.11	1.35
Irrigation	0.25	0.62	0.87	Blountsville Utility Board	0.58	0.00	0.58
	29%	71%		Cleveland Water Works	0.32	0.00	0.32
Aquaculture	0.00	0.00	0.00	Nectar Water Department	0.18	0.00	0.18
	0%	0%		Oneonta Utilities Board	0.75	1.56	2.31
Livestock	0.47	0.51	0.98	Snead	0.22	0.00	0.22
	48%	52%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.12	0	0.12				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	4.17	53.29	57.46				
	7%	93%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



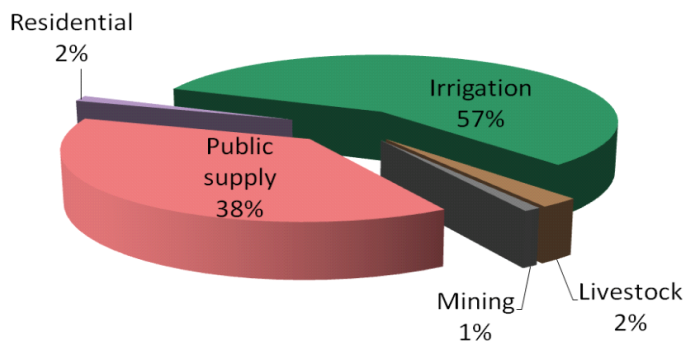
BULLOCK

Population 10,914
 Pop served by public supply 10,180

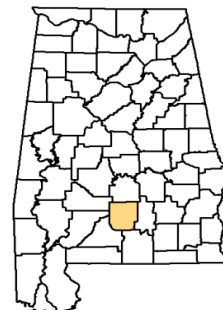
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.31	0.00	2.31	Midway Water Works	0.12	0.00	0.12
	100%	0%		South Bullock Water Authority	0.82	0.00	0.82
Residential	0.08	0.00	0.08	Union Springs Utilities Board	1.37	0.00	1.37
	100%	0%					
Irrigation	1.72	1.85	3.57				
	48%	52%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.05	0.09	0.14				
	36%	64%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.04	0.02	0.06				
	67%	33%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	4.20	1.96	6.16				
	68%	32%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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BUTLER

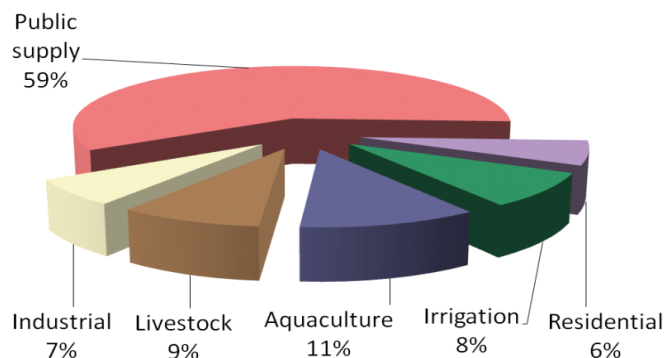


Population 20,947
Pop served by public supply 17,600

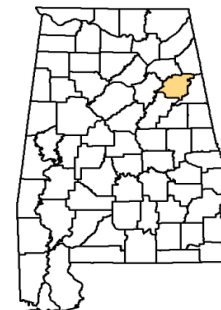
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.70	0.00	2.70	Butler County Water Authority	1.07	0.00	1.07
	100%	0%		Georgiana Water Works and Sewer Board	0.24	0.00	0.24
Residential	0.28	0.00	0.28	Greenville Water Works and Sewer Board	1.04	0.00	1.04
	100%	0%		The Water Works and Sewer Board of the Town of Fort Deposit	0.25	0.00	0.25
Irrigation	0.06	1.31	1.37	Town of McKenzie - Town Hall	0.10	0.00	0.10
	4%	96%					
Aquaculture	0.27	0.23	0.50				
	54%	46%					
Livestock	0.16	0.24	0.40				
	40%	60%					
Industrial	0.30	0.00	0.30				
	100%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	3.77	1.78	5.55				
	68%	32%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.30	0.00	0.30



CALHOUN

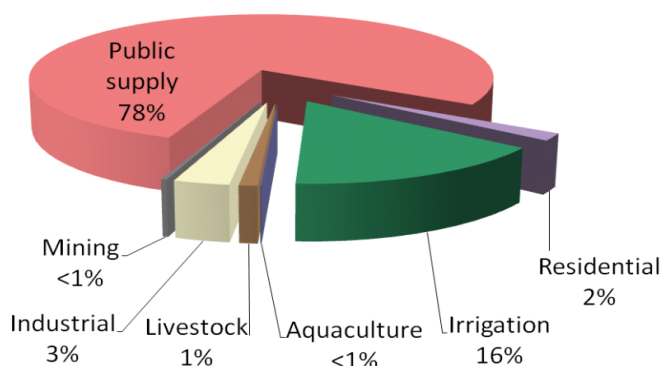


Population 118,572
 Pop served by public supply 112,390

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	20.84 89%	2.46 11%	23.30	Anniston Water Works and Sewer Board	13.42	0.15	13.57
Residential	0.51 100%	0.00 0%	0.51	Calhoun County Water Authority	3.45	0.00	3.45
Irrigation	0.00 0%	5.01 100%	5.01	Jacksonville Water Works & Sewer Board	0.00	1.31	1.31
Aquaculture	0.00 0%	0.02 100%	0.02	Oxford Water Works and Sewer Board	3.33	0.00	3.33
Livestock	0.13 41%	0.19 59%	0.32	Piedmont Water Works and Sewer Board	0.00	1.00	1.00
Industrial	0.96 100%	0.00 0%	0.96	Weaver	0.64	0.00	0.64
Mining	0.07 70%	0.03 30%	0.1				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	22.51 74%	7.71 26%	30.22				

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Beverage Manufacturing	0.43	0.00	0.43
Foundries	0.07	0.00	0.07
Pulp, Paper, and Paperboard Mills	0.46	0.00	0.46



CHAMBERS

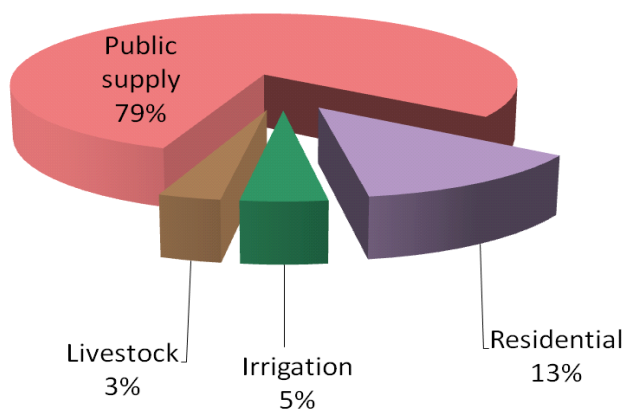


Population 34,215
Pop served by public supply 25,880

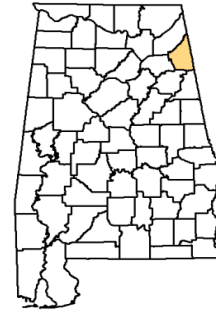
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	4.31	4.31	Chattahoochee Valley Water			
	0%	100%		Supply District	0.00	3.78	3.78
Residential	0.71	0.00	0.71	Lafayette	0.00	0.53	0.53
	100%	0%					
Irrigation	0.22	0.13	0.35				
	62%	38%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.07	0.11	0.18				
	39%	61%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	1.00	4.55	5.55				
	18%	82%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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CHEROKEE

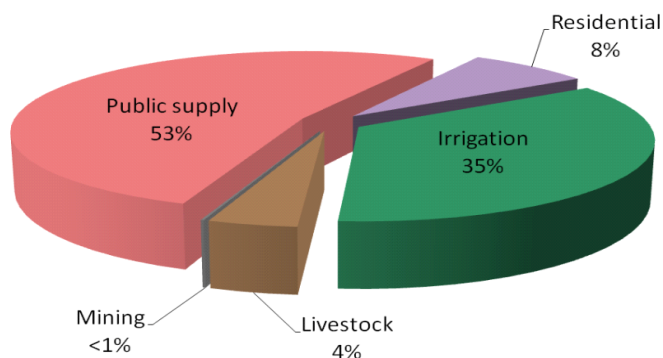


Population 25,989
 Pop served by public supply 17,880

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.54	0.96	3.50	Centre Water Works & Sewer Board	0.00	0.96	0.96
	73%	27%		Cherokee County Water Authority	1.45	0.00	1.45
Residential	0.52	0.00	0.52	Northeast Alabama Water, Sewer & F.P.A.	1.09	0.00	1.09
	100%	0%					
Irrigation	0.00	2.39	2.39				
	0%	100%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.11	0.17	0.28				
	39%	61%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.01	0	0.01				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	3.18	3.52	6.70				
	47%	53%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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CHILTON



Population 43,643
Pop served by public supply 34,330

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

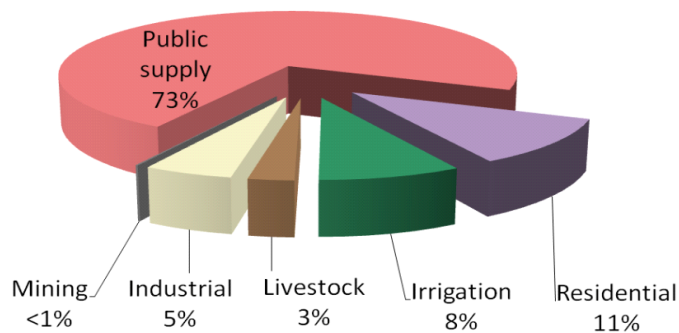
Category	GW	SW	Totals
Public Supply	3.05	1.83	4.88
	63%	38%	
Residential	0.74	0.00	0.74
	100%	0%	
Irrigation	0.53	0.15	0.68
	78%	22%	
Aquaculture	0.00	0.00	0.00
	0%	0%	
Livestock	0.07	0.11	0.18
	39%	61%	
Industrial	0.35	0.00	0.35
	100%	0%	
Mining	0.01	0	0.01
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	4.75	2.09	6.84
	69%	31%	

Withdrawals by Public Supplier, in MGD

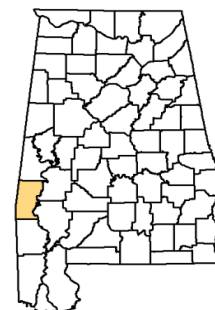
System Name	GW	SW	Total
Chilton Water Authority	2.30	0.00	2.30
Clanton Waterworks & Sewer Board	0.00	1.83	1.83
Thorsby	0.75	0.00	0.75

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Sawmills and Wood Preservation	0.35	0.00	0.35



CHOCTAW

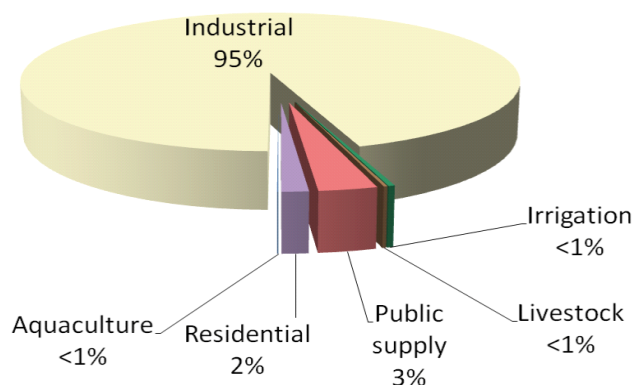


Population 13,859
 Pop served by public supply 5,690

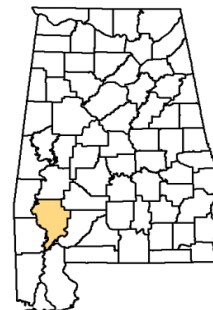
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.36	0.00	1.36	Gilbertown Utilities Board	0.49	0.00	0.49
	100%	0%		North Choctaw Water Authority	0.30	0.00	0.30
Residential	0.62	0.00	0.62	Town of Butler	0.36	0.00	0.36
	100%	0%		Utilities Board - Town of Pennington	0.21	0.00	0.21
Irrigation	0.12	0.13	0.25				
	47%	53%					
Aquaculture	0.00	0.03	0.03				
	0%	100%					
Livestock	0.04	0.05	0.09				
	44%	56%					
Industrial	0.00	40.76	40.76				
	0%	100%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	2.14	40.97	43.11				
	5%	95%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	40.76	40.76



CLARKE



Population 25,833
Pop served by public supply 18,920

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

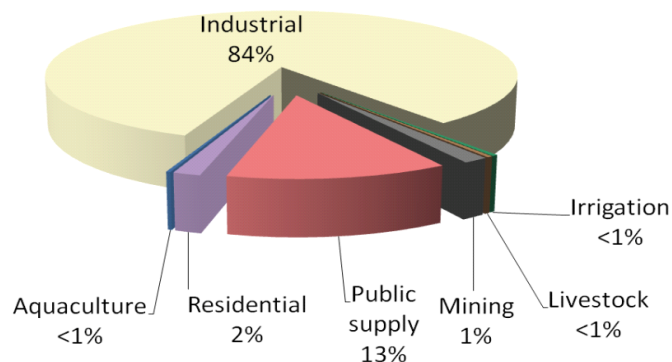
Category	GW	SW	Totals
Public Supply	2.14 70%	0.90 30%	3.04
Residential	0.38 100%	0.00 0%	0.38
Irrigation	0.03 18%	0.13 82%	0.16
Aquaculture	0.03 50%	0.03 50%	0.06
Livestock	0.03 38%	0.05 63%	0.08
Industrial	0.00 0%	20.22 100%	20.22
Mining	0.35 100%	0 0%	0.35
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	2.96 12%	21.33 88%	24.29

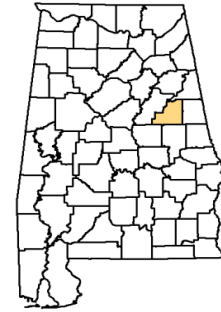
Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Coffeeville Water Works	0.19	0.00	0.19
Grove Hill Water Works Board	0.76	0.00	0.76
Jackson Water and Sewer Board	0.77	0.90	1.67
Old Line Water Authority	0.31	0.00	0.31
Utilities Board of the Town of Fulton	0.11	0.00	0.11

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	20.22	20.22

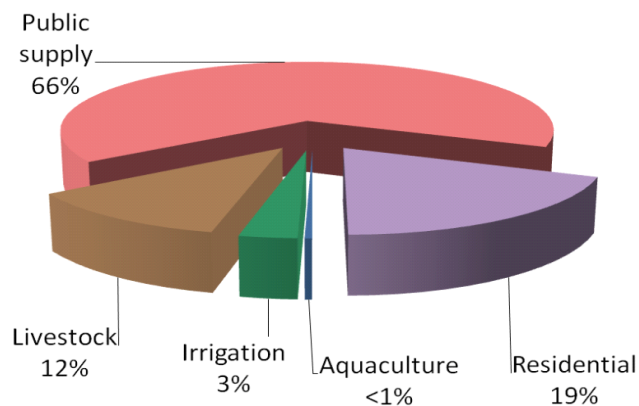


CLAY

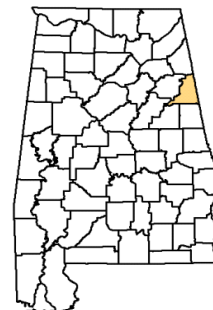
Population 13,932
 Pop served by public supply 6,350

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00 0%	1.66 100%	1.66	Clay County Water Authority	0.00	1.66	1.66
Residential	0.48 100%	0.00 0%	0.48				
Irrigation	0.00 0%	0.08 100%	0.08				
Aquaculture	0.00 0%	0.01 100%	0.01				
Livestock	0.13 43%	0.17 57%	0.30				
Industrial	0.00 0%	0.00 0%	0.00				
Mining	0 0%	0 0%	0				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	0.61 24%	1.92 76%	2.53				

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



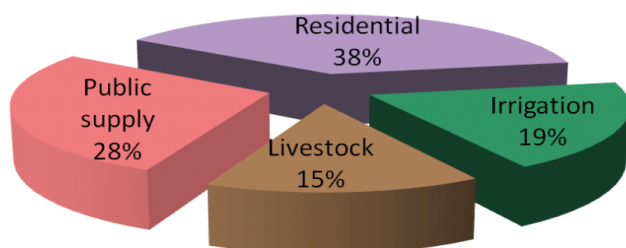
CLEBURNE



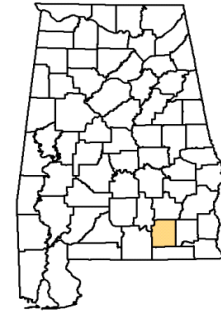
Population 14,972
Pop served by public supply 6,570

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00 0%	0.56 100%	0.56	Heflin Water Works	0.00	0.56	0.56
Residential	0.77 100%	0.00 0%	0.77				
Irrigation	0.00 0%	0.39 100%	0.39				
Aquaculture	0.00 0%	0.00 0%	0.00				
Livestock	0.14 47%	0.16 53%	0.30				
Industrial	0.00 0%	0.00 0%	0.00				
Mining	0 0%	0 0%	0				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	0.91 45%	1.11 55%	2.02				

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



COFFEE

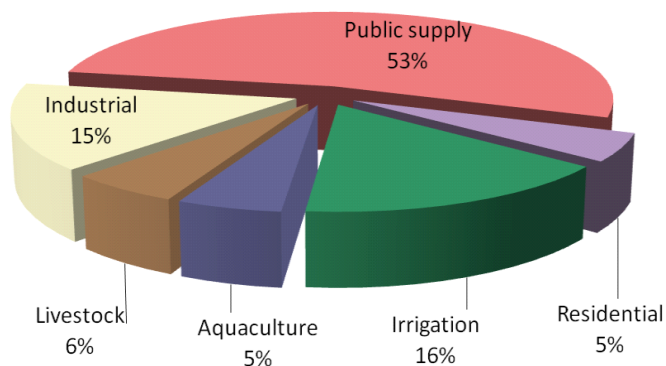


Population 49,948
Pop served by public supply 41,200

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	7.61	0.00	7.61	Coffee County Water Authority	0.19	0.00	0.19
	100%	0%		Elba Water and Electric Board	0.68	0.00	0.68
Residential	0.72	0.00	0.72	Enterprise Water Works Board	5.50	0.00	5.50
	100%	0%		Jack Water System Inc	0.13	0.00	0.13
Irrigation	0.43	2.12	2.55	Kinston Water	0.07	0.00	0.07
	17%	83%		New Brockton Water & Sewer Board	0.65	0.00	0.65
Aquaculture	0.48	0.26	0.74	New Hope Water System, Inc.	0.07	0.00	0.07
	65%	35%		Opp Utilities Board	0.32	0.00	0.32
Livestock	0.34	0.46	0.80				
	43%	58%					
Industrial	2.22	0.00	2.22				
	100%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	11.80	2.84	14.64				
	81%	19%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Animal Slaughtering and Processing	2.22	0.00	2.22



COLBERT

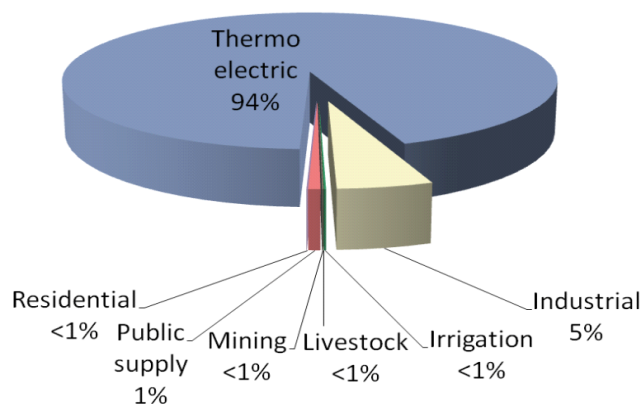


Population 54,428
Pop served by public supply 50,490

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.57 6%	8.22 94%	8.79	Cherokee Waterworks and Gas Board	0.00	0.32	0.32
Residential	0.27 100%	0.00 0%	0.27	Colbert County Rural Water Hawk Pride Mountain Water System	0.32	0.00	0.32
Irrigation	0.61 26%	1.76 74%	2.37	Leighton Water & Sewer Board	0.25	0.00	0.25
Aquaculture	0.00 0%	0.00 0%	0.00	Muscle Shoals Utilities Board	0.00	3.65	3.65
Livestock	0.13 45%	0.16 55%	0.29	Sheffield Utilities	0.00	1.75	1.75
Industrial	0.22 0%	69.54 100%	69.76	Tuscumbia - Water Department	0.00	1.80	1.80
Mining	0 0%	0.73 100%	0.73				
Thermoelectric	0.00 0%	1262.30 100%	1262.30				
Totals	1.80 0%	1342.71 100%	1344.51				

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Architectural and Structural Metals Manufacturing	0.22	2.19	2.41
Basic Chemical Manufacturing	0.00	26.30	26.30
Electric Power Generation, Transmission and Distribution	0.00	1262.30	1262.30
Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	0.00	35.45	35.45
Pulp, Paper, and Paperboard Mills	0.00	5.60	5.60



CONECUH

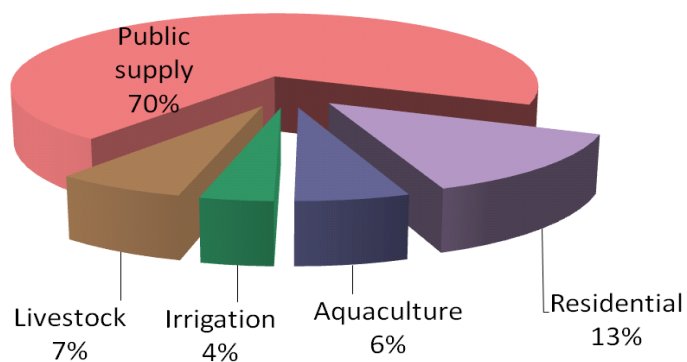


Population 13,228
Pop served by public supply 7,540

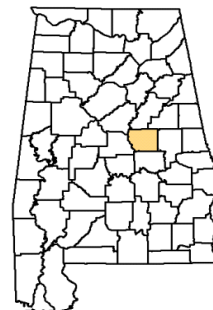
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.69	0.00	1.69	Castleberry	0.08	0.00	0.08
	100%	0%		City of Evergreen	1.13	0.00	1.13
Residential	0.32	0.00	0.32	Fairview Water System	0.07	0.00	0.07
	100%	0%		Hamden Ridge P/A, Inc.	0.13	0.00	0.13
Irrigation	0.06	0.13	0.19	Owassa/Brownville Water and F. P.			
	31%	69%		A. Inc.	0.25	0.00	0.25
Aquaculture	0.07	0.07	0.14	Repton	0.03	0.00	0.03
	50%	50%					
Livestock	0.06	0.10	0.16				
	38%	63%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	2.20	0.30	2.50				
	88%	12%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Other Wood Product Manufacturing	0.00	0.00	0.00



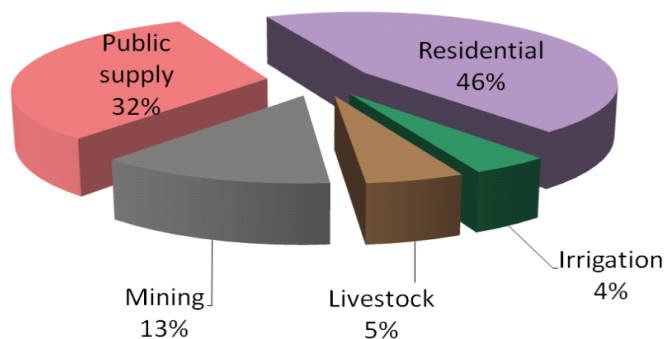
COOSA



Population 11,539
Pop served by public supply 6,650

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.30	0.00	0.30	Stewartville Water	0.30	0.00	0.30
	100%	0%					
Residential	0.43	0.00	0.43				
	100%	0%					
Irrigation	0.02	0.02	0.04				
	53%	47%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.02	0.03	0.05				
	40%	60%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.08	0.04	0.12				
	67%	33%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	0.85	0.09	0.94				
	91%	9%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



COVINGTON

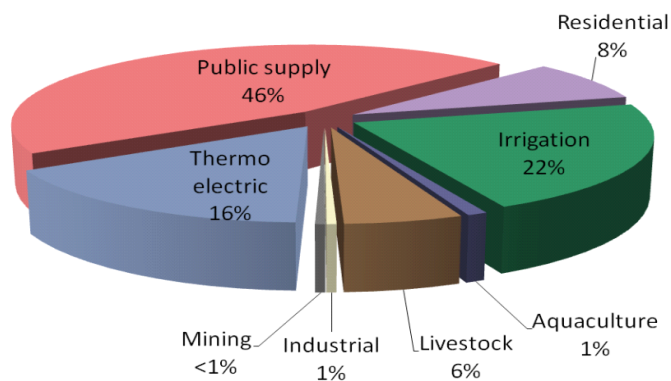


Population 37,765
Pop served by public supply 24,110

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	4.96	0.00	4.96	Covington County Water			
	100%	0%		Department	1.09	0.00	1.09
Residential	0.88	0.00	0.88	Floral Water Board	0.47	0.00	0.47
	100%	0%		Lockhart	0.08	0.00	0.08
Irrigation	0.95	1.54	2.49	Opp Utilities Board	0.65	0.00	0.65
	38%	62%		Red Level	0.06	0.00	0.06
Aquaculture	0.05	0.05	0.10	Town of River Falls	0.20	0.00	0.20
	50%	50%		Utility Board of the City of			
Livestock	0.25	0.34	0.59	Andalusia	2.41	0.00	2.41
	42%	58%					
Industrial	0.05	0.00	0.05				
	100%	0%					
Mining	0.05	0	0.05				
	100%	0%					
Thermoelectric	0.00	1.74	1.74				
	0%	100%					
Totals	7.19	3.67	10.86				
	66%	34%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Apparel Accessories and Other			
Apparel Manufacturing	0.05	0.00	0.05
Electric Power Generation, Transmission and Distribution	0.00	1.74	1.74



CRENSHAW

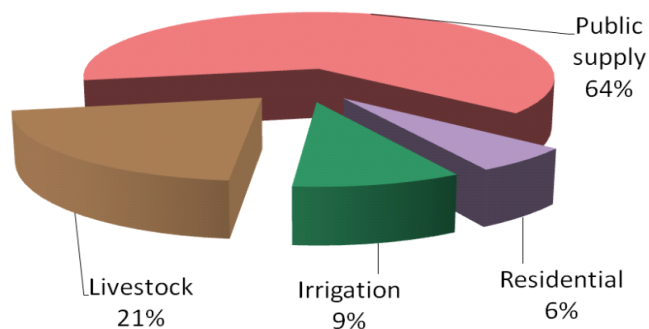


Population 13,906
Pop served by public supply 10,560

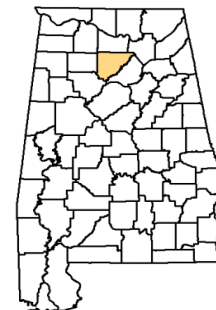
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.06	0.00	2.06	Luverne Water Works and Sewer Board	0.45	0.00	0.45
	100%	0%		Quint-Mar Water Authority	0.38	0.00	0.38
Residential	0.19	0.00	0.19	Rutledge	0.07	0.00	0.07
	100%	0%		Sellers Station Water System, Inc.	0.21	0.00	0.21
Irrigation	0.00	0.29	0.29	South Crenshaw County Water Authority	0.78	0.00	0.78
	0%	100%		Town of Brantley	0.12	0.00	0.12
Aquaculture	0.00	0.00	0.00	Town of Dozier	0.05	0.00	0.05
	0%	0%					
Livestock	0.28	0.39	0.67				
	42%	58%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	2.53	0.68	3.21				
	79%	21%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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CULLMAN

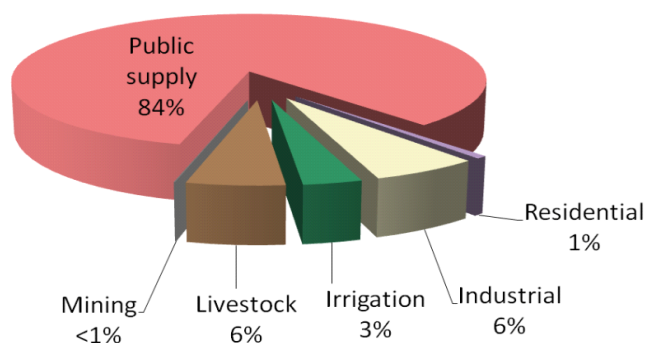


Population 80,406
 Pop served by public supply 77,820

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.48 2%	30.57 98%	31.05	Birmingham WWB	0.00	18.36	18.36
				Cullman Utilities Board	0.00	12.21	12.21
Residential	0.24 100%	0.00 0%	0.24	Hanceville Water and Sewer Board	0.48	0.00	0.48
Irrigation	0.57 44%	0.74 56%	1.31				
Aquaculture	0.00 0%	0.00 0%	0.00				
Livestock	1.04 51%	1.01 49%	2.05				
Industrial	0.43 19%	1.84 81%	2.27				
Mining	0.01 33%	0.02 67%	0.03				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	2.77 7%	34.18 93%	36.95				

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Animal Food Manufacturing	0.00	0.11	0.11
Animal Slaughtering and Processing	0.00	1.73	1.73
Veneer, Plywood, and Engineered Wood Product Manufacturing	0.43	0.00	0.43



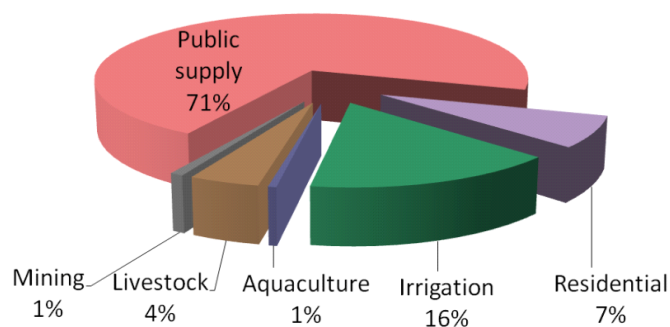
DALE



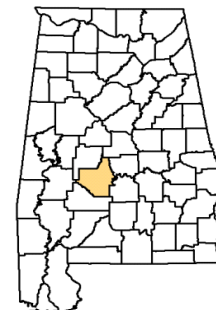
Population 50,251
Pop served by public supply 41,150

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	6.85	0.00	6.85	American Water Enterprises, Inc.	1.65	0.00	1.65
	100%	0%		Ariton Water Department	0.11	0.00	0.11
Residential	0.69	0.00	0.69	Dale County Water Authority	0.63	0.00	0.63
	100%	0%		Daleville	0.33	0.00	0.33
Irrigation	0.30	2.00	2.30	Dothan Water System	0.75	0.00	0.75
	13%	87%		Midland City	0.30	0.00	0.30
Aquaculture	0.00	0.05	0.05	Newton Water and Sewer Board	0.17	0.00	0.17
	0%	100%		Ozark Utilities Board	2.47	0.00	2.47
Livestock	0.18	0.24	0.42	Pinckard	0.11	0.00	0.11
	43%	57%		Town of Level Plains	0.33	0.00	0.33
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.05	0.03	0.08				
	63%	38%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	8.07	2.32	10.39				
	78%	22%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



DALLAS

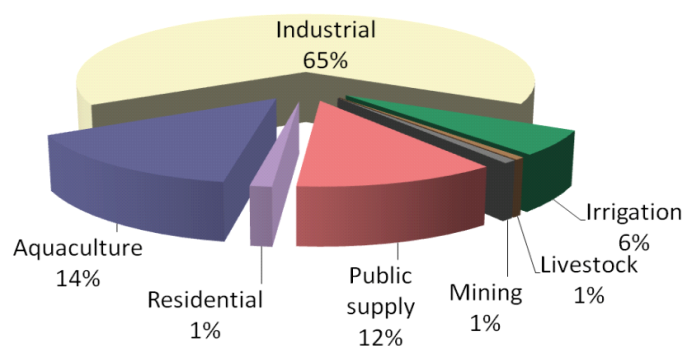


Population 43,820
 Pop served by public supply 34,400

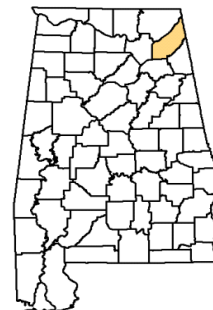
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	5.88	0.00	5.88	Dallas County Water & Sewer Authority	0.71	0.00	0.71
	100%	0%		North Dallas Water Authority	0.53	0.00	0.53
Residential	0.64	0.00	0.64	Selma Water Works	3.84	0.00	3.84
	100%	0%		South Dallas Water Authority	0.53	0.00	0.53
Irrigation	0.50	2.45	2.95	Town of Orrville	0.02	0.00	0.02
	17%	83%		West Dallas Water Authority	0.25	0.00	0.25
Aquaculture	5.00	2.14	7.14				
	70%	30%					
Livestock	0.12	0.18	0.30				
	40%	60%					
Industrial	0.14	32.19	32.33				
	0%	100%					
Mining	0.27	0.12	0.39				
	69%	31%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	12.55	37.08	49.63				
	25%	75%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.14	32.19	32.33



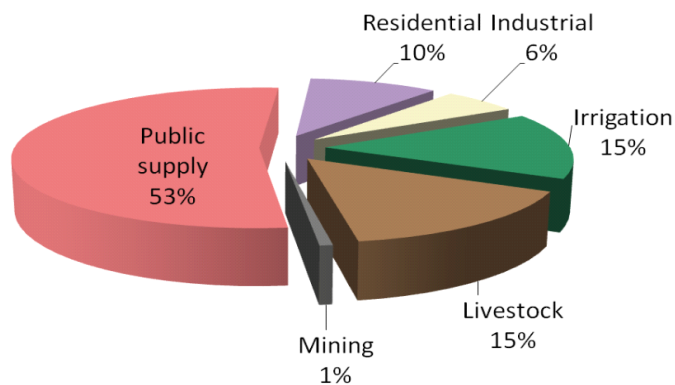
DE KALB



Population 71,109
Pop served by public supply 51,740

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.81 11%	6.30 89%	7.11	Crossville Water Board	0.04	0.00	0.04
Residential	1.32 100%	0.00 0%	1.32	Fort Payne Water Works Board	0.00	6.30	6.30
Irrigation	0.46 21%	1.69 79%	2.15	Northeast Alabama Water, Sewer & F.P.A.	0.54	0.00	0.54
Aquaculture	0.00 0%	0.00 0%	0.00	Valley Head Water	0.23	0.00	0.23
Livestock	0.97 47%	1.09 53%	2.06				
Industrial	0.77 100%	0.00 0%	0.77				
Mining	0.07 70%	0.03 30%	0.1				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	4.40 33%	9.11 67%	13.51				

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total
Poultry and Egg Production	0.77	0.00	0.77



ELMORE

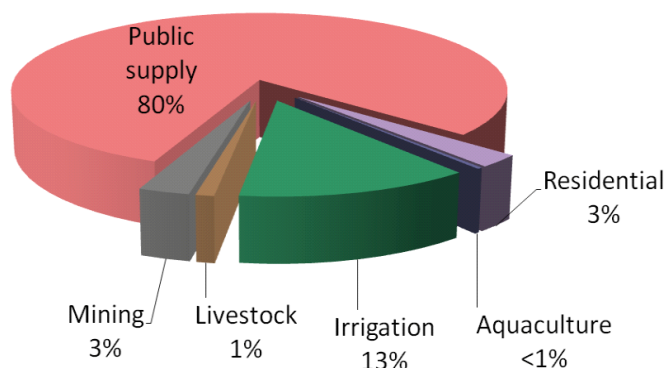


Population 79,303
 Pop served by public supply 73,700

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	3.72	9.65	13.37	Central Elmore Water & Sewer Authority	0.00	5.33	5.33
	28%	72%		Elmore Water Authority	0.78	0.00	0.78
Residential	0.42	0.00	0.42	Five Star Water Supply	0.00	4.32	4.32
	100%	0%		Holtville Water System, Inc.	0.10	0.00	0.10
Irrigation	0.50	1.56	2.06	Marbury Water System	0.62	0.00	0.62
	24%	76%		Millbrook Utility System	0.15	0.00	0.15
Aquaculture	0.00	0.05	0.05	Prattville Water Works Board	0.92	0.00	0.92
	0%	100%		Tri-Community Water System	1.15	0.00	1.15
Livestock	0.08	0.09	0.17				
	47%	53%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.32	0.15	0.47				
	68%	32%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	5.04	11.50	16.54				
	30%	70%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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ESCAMBIA

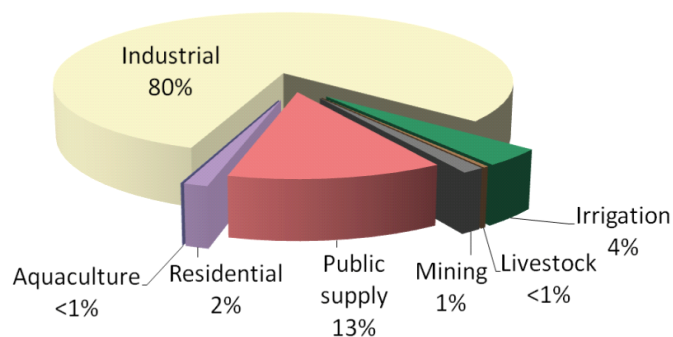


Population 38,319
Pop served by public supply 31,370

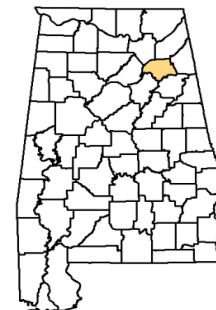
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	5.65	0.00	5.65	Atmore Utility Board	2.29	0.00	2.29
	100%	0%		Brewton Water Works Board	1.49	0.00	1.49
Residential	0.63	0.00	0.63	Canoe Water and Fire Protection Authority	0.08	0.00	0.08
	100%	0%		East Brewton	0.28	0.00	0.28
Irrigation	1.16	0.66	1.82	Flomaton	0.23	0.00	0.23
	64%	36%		Freemanville Water System, Inc.	0.46	0.00	0.46
Aquaculture	0.02	0.01	0.03	Huxford Water and Fire Protection Authority	0.05	0.00	0.05
	67%	33%		McCall Water System	0.54	0.00	0.54
Livestock	0.06	0.08	0.14	Pollard	0.02	0.00	0.02
	43%	57%		Ridge Road Water Authority	0.14	0.00	0.14
Industrial	1.40	33.66	35.06	Riverview Water System	0.07	0.00	0.07
	4%	96%					
Mining	0.41	0	0.41				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	9.33	34.41	43.74				
	21%	79%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.19	0.00	0.19
Converted Paper Product Manufacturing	0.12	33.66	33.78
Sawmills and Wood Preservation	1.09	0.00	1.09



ETOWAH

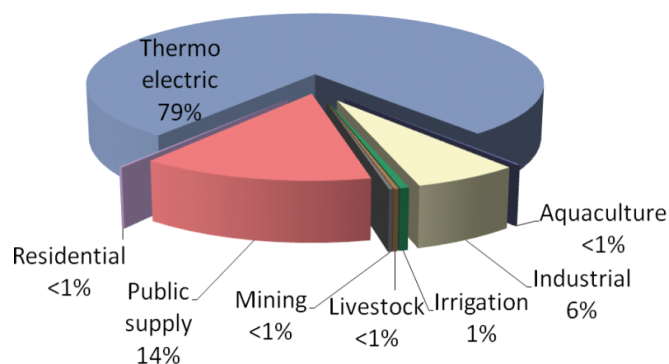


Population 104,430
Pop served by public supply 100,420

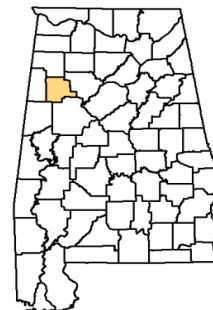
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	4.67	15.68	20.35	Atalla Water	1.28	0.00	1.28
	23%	77%		Big Wills Water	0.25	0.00	0.25
Residential	0.31	0.00	0.31	Gadsden Water Works & Sewer Board	0.00	15.68	15.68
	100%	0%		Glencoe Water and Sewer Works	0.73	0.00	0.73
Irrigation	0.13	2.13	2.26	Hokes Bluff Water Board	0.86	0.00	0.86
	6%	94%		Southside Water Works & Sewer Board	0.80	0.00	0.80
Aquaculture	0.00	0.31	0.31	Walnut Grove	0.09	0.00	0.09
	0%	100%		West Etowah County Water Authority	0.66	0.00	0.66
Livestock	0.19	0.23	0.42				
	45%	55%					
Industrial	0.00	9.21	9.21				
	0%	100%					
Mining	0.24	0.11	0.35				
	69%	31%					
Thermoelectric	0.00	114.66	114.66				
	0%	100%					
Totals	5.54	142.33	147.87				
	4%	96%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	114.66	114.66
Rubber Product Manufacturing	0.00	9.21	9.21



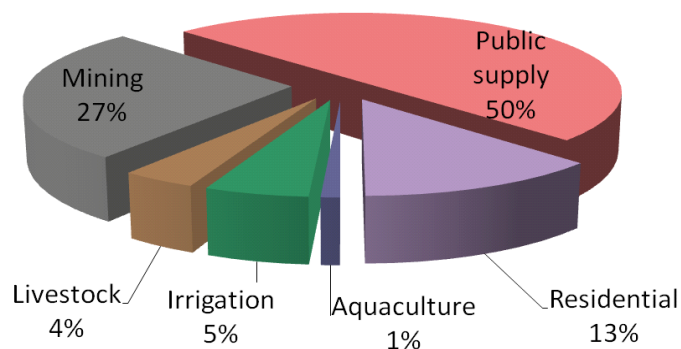
FAYETTE



Population 17,241
Pop served by public supply 10,220

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.05 2%	1.99 98%	2.04	Berry	0.00	0.53	0.53
Residential	0.52 100%	0.00 0%	0.52	Fayette Water Board	0.00	1.46	1.46
Irrigation	0.00 0%	0.32 100%	0.32	Glen Allen	0.05	0.00	0.05
Aquaculture	0.02 50%	0.02 50%	0.04				
Livestock	0.07 44%	0.09 56%	0.16				
Industrial	0.00 0%	0.00 0%	0.00				
Mining	0 0%	1.1 100%	1.1				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	0.66 16%	3.52 84%	4.18				

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



FRANKLIN

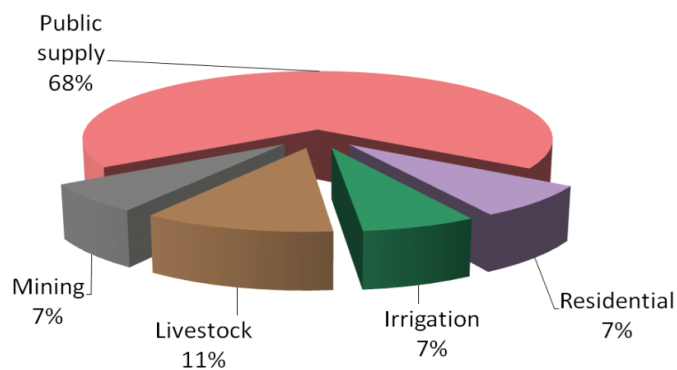


Population 31,704
 Pop served by public supply 25,010

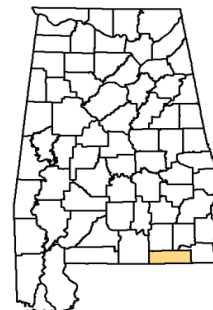
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.08	4.68	5.76	Franklin County Water Service			
	19%	81%		Authority	0.00	1.19	1.19
Residential	0.51	0.00	0.51	Red Bay Water & Gas Board	0.80	0.00	0.80
	100%	0%		Russellville Water & Sewer Board	0.28	3.49	3.77
Irrigation	0.00	0.52	0.52				
	0%	100%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.32	0.43	0.75				
	43%	57%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.31	0.14	0.45				
	69%	31%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	2.22	5.77	7.99				
	28%	72%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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GENEVA

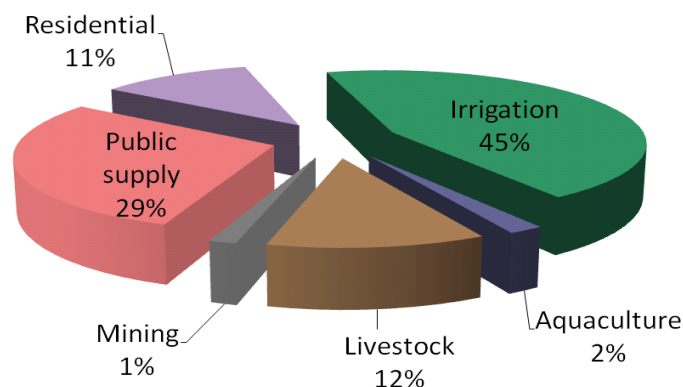


Population 26,790
Pop served by public supply 15,550

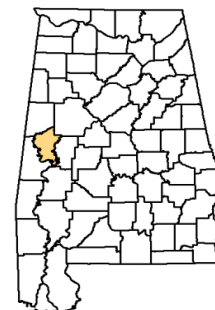
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.98	0.00	1.98	Bellwood Water & F.P.A.	0.03	0.00	0.03
	100%	0%		Black Water Works	0.02	0.00	0.02
Residential	0.76	0.00	0.76	Coffee Springs	0.02	0.00	0.02
	100%	0%		Geneva Water Works	0.52	0.00	0.52
Irrigation	1.42	1.63	3.05	Hartford	0.40	0.00	0.40
	47%	53%		Malvern	0.12	0.00	0.12
Aquaculture	0.10	0.03	0.13	North Geneva County Water Authority	0.07	0.00	0.07
	77%	23%		Samson (City of)	0.23	0.00	0.23
Livestock	0.35	0.45	0.80	Slocumb Water Works	0.23	0.00	0.23
	44%	56%		Town of Coffee Springs	0.02	0.00	0.02
Industrial	0.00	0.00	0.00	Town of Taylor	0.32	0.00	0.32
	0%	0%					
Mining	0.07	0.03	0.1				
	70%	30%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	4.68	2.14	6.82				
	69%	31%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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GREENE

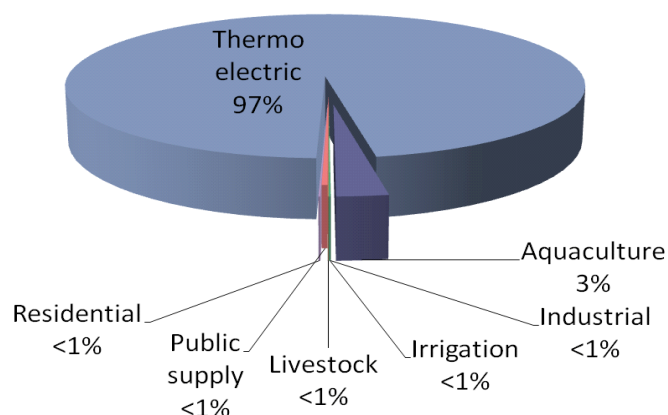


Population 9,045
Pop served by public supply 6,340

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.10	0.00	1.10	Eutaw Water Department	0.60	0.00	0.60
	100%	0%		Forkland Water	0.10	0.00	0.10
Residential	0.35	0.00	0.35	Fosters-Ralph Water Authority, Inc.	0.09	0.00	0.09
	100%	0%		Greene County Sewer & Water	0.31	0.00	0.31
Irrigation	0.23	0.04	0.27				
	85%	15%					
Aquaculture	5.71	4.13	9.84				
	58%	42%					
Livestock	0.08	0.13	0.21				
	38%	62%					
Industrial	0.03	0.00	0.03				
	100%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	354.71	354.71				
	0%	100%					
Totals	7.50	359.01	366.51				
	2%	98%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.03	354.71	354.74



HALE

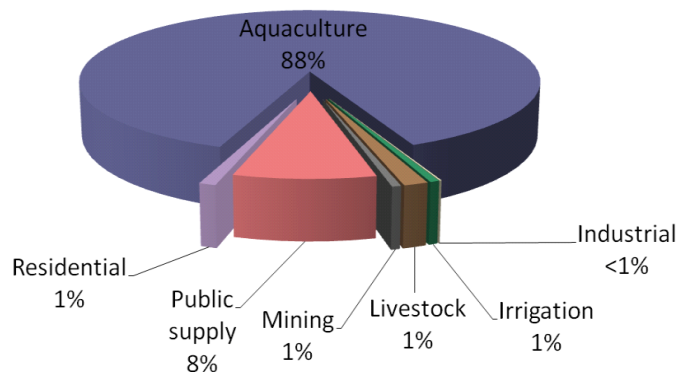


Population 15,760
Pop served by public supply 12,850

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.71	0.00	1.71	Greensboro Utilities Board	0.43	0.00	0.43
	100%	0%		Hale County Water Authority	0.77	0.00	0.77
Residential	0.20	0.00	0.20	Moundville	0.51	0.00	0.51
	100%	0%					
Irrigation	0.05	0.13	0.18				
	27%	73%					
Aquaculture	11.77	6.06	17.83				
	66%	34%					
Livestock	0.13	0.16	0.29				
	45%	55%					
Industrial	0.02	0.00	0.02				
	100%	0%					
Mining	0.11	0	0.11				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	13.99	6.35	20.34				
	69%	31%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Lumber and Other Construction			
Materials Merchant Wholesalers	0.02	0.00	0.02



HENRY



Population 17,302
Pop served by public supply 13,380

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

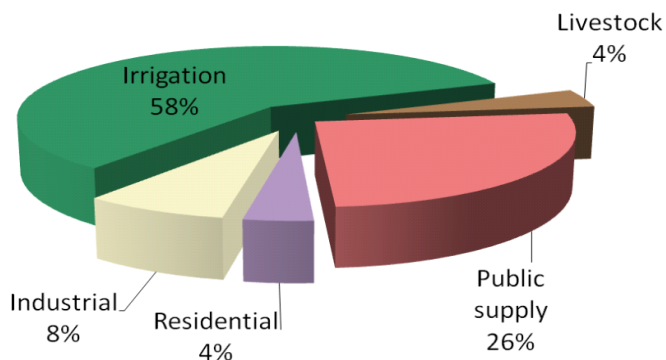
Category	GW	SW	Totals
Public Supply	1.80 100%	0.00 0%	1.80
Residential	0.26 100%	0.00 0%	0.26
Irrigation	1.01 24%	3.17 76%	4.18
Aquaculture	0.00 0%	0.00 0%	0.00
Livestock	0.11 39%	0.17 61%	0.28
Industrial	0.54 100%	0.00 0%	0.54
Mining	0 0%	0 0%	0
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	3.72 53%	3.34 47%	7.06

Withdrawals by Public Supplier, in MGD

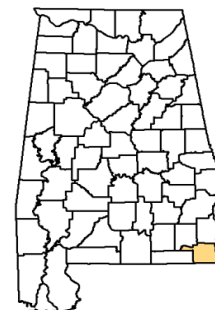
System Name	GW	SW	Total
Abbeville Waterworks and Sewer Board	0.55	0.00	0.55
Headland Water Works Board	0.44	0.00	0.44
Henry County Water Authority	0.74	0.00	0.74
Newville	0.07	0.00	0.07

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Other Food Manufacturing	0.54	0.00	0.54



HOUSTON

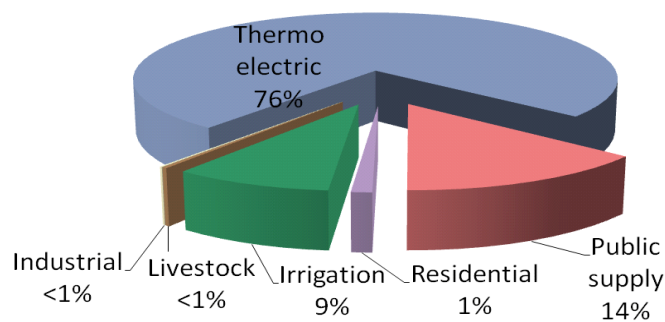


Population 101,547
Pop served by public supply 82,000

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	16.77	0.00	16.77	Ashford	0.25	0.00	0.25
	100%	0%		Columbia Water Works & Sewer Board	0.08	0.00	0.08
Residential	1.37	0.00	1.37	Cottonwood	0.31	0.00	0.31
	100%	0%		Cowarts	0.34	0.00	0.34
Irrigation	8.00	3.57	11.57	Dothan Water System	14.76	0.00	14.76
	69%	31%		Gordon Water Works	0.03	0.00	0.03
Aquaculture	0.00	0.00	0.00	Houston County Water Authority	0.39	0.00	0.39
	0%	0%		Kinsey	0.13	0.00	0.13
Livestock	0.14	0.20	0.34	Town of Taylor	0.29	0.00	0.29
	41%	59%		Webb Water System	0.19	0.00	0.19
Industrial	0.17	0.00	0.17				
	100%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	89.30	89.30				
	0%	100%					
Totals	26.45	93.07	119.52				
	22%	78%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.17	89.30	89.47



JACKSON

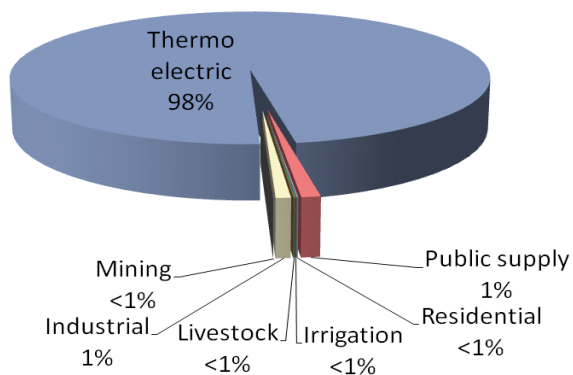


Population 53,227
Pop served by public supply 39,610

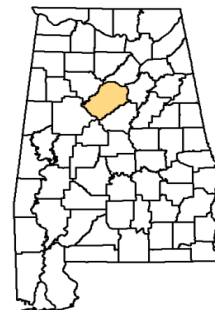
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.67	10.70	11.37	Bridgeport Utilities Board	0.19	1.57	1.76
	6%	94%		Dekalb-Jackson Water Supply District	0.00	1.21	1.21
Residential	0.82	0.00	0.82	Pisgah	0.11	0.00	0.11
	100%	0%		Scottsboro Water Board	0.00	4.41	4.41
Irrigation	0.17	0.93	1.10	Section & Dutton Water Boards	0.00	3.51	3.51
	15%	85%		Stevenson Utilities Board	0.37	0.00	0.37
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.32	0.39	0.71				
	45%	55%					
Industrial	0.00	8.91	8.91				
	0%	100%					
Mining	0.06	0.03	0.09				
	67%	33%					
Thermoelectric	0.00	1044.42	1044.42				
	0%	100%					
Totals	2.04	1065.38	1067.42				
	0%	100%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	1044.42	1044.42
Pulp, Paper, and Paperboard Mills	0.00	8.91	8.91



JEFFERSON

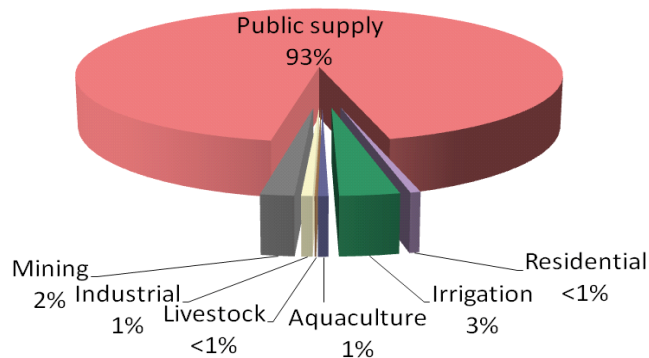


Population 658,466
Pop served by public supply 652,420

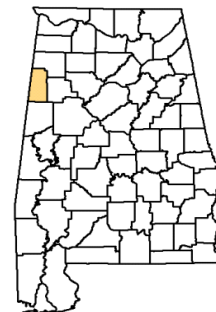
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	8.44	67.42	75.86	Birmingham WWB	0.00	52.39	52.39
	11%	89%		Governmental Utility Services Corporation (Bessemer)	0.00	11.83	11.83
Residential	0.46	0.00	0.46	Irondale Water System	1.18	0.00	1.18
	100%	0%		Leeds	1.92	0.00	1.92
Irrigation	0.13	6.38	6.51	Trussville Utilities Board	4.68	0.00	4.68
	2%	98%		Warrior River Water Authority	0.66	3.20	3.86
Aquaculture	0.01	0.45	0.46				
	2%	98%					
Livestock	0.03	0.04	0.07				
	43%	57%					
Industrial	0.50	0.00	0.50				
	100%	0%					
Mining	0.85	0.65	1.5				
	57%	43%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	10.42	74.94	85.36				
	12%	88%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Cement and Concrete Product Manufacturing	0.16	0.00	0.16
Steel Product Manufacturing from Purchased Steel	0.34	0.00	0.34



LAMAR

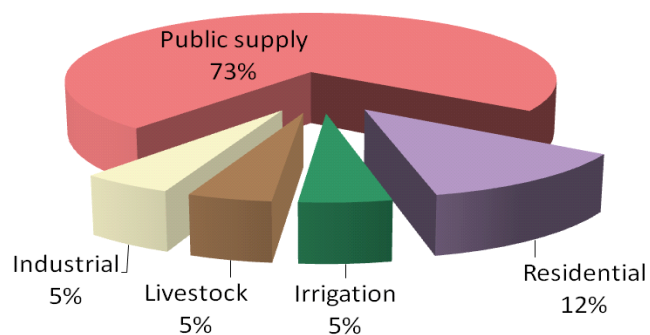


Population 14,564
Pop served by public supply 9,350

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.60	0.00	1.60	Detroit Water Department	0.04	0.00	0.04
	100%	0%		Kennedy	0.16	0.00	0.16
Residential	0.27	0.00	0.27	Millport	0.18	0.00	0.18
	100%	0%		Sulligent	0.36	0.00	0.36
Irrigation	0.01	0.17	0.18	Vernon Water & Sewer	0.86	0.00	0.86
	5%	95%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.05	0.05	0.10				
	50%	50%					
Industrial	0.11	0.00	0.11				
	100%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	2.04	0.22	2.26				
	90%	10%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Sawmills and Wood Preservation	0.11	0.00	0.11



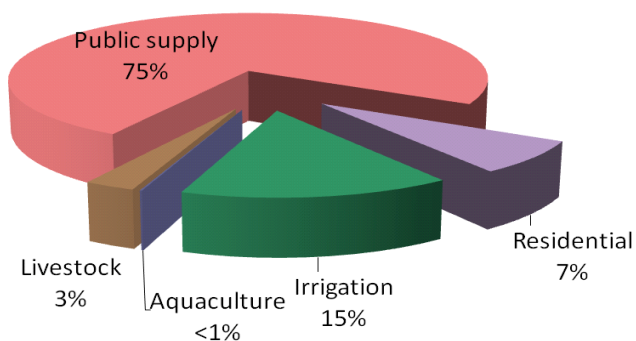
LAUDERDALE



Population 92,709
Pop served by public supply 77,930

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.15	10.91	12.06	Florence Water & Sewer			
	10%	90%		Department	0.12	10.91	11.03
Residential	1.19	0.00	1.19	Greenhill Water System	0.45	0.00	0.45
	100%	0%		Rogersville Water & Sewer Board	0.58	0.00	0.58
Irrigation	1.27	1.58	2.85				
	45%	55%					
Aquaculture	0.02	0.00	0.02				
	100%	0%					
Livestock	0.19	0.27	0.46				
	41%	59%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	3.82	12.76	16.58				
	23%	77%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



LAWRENCE

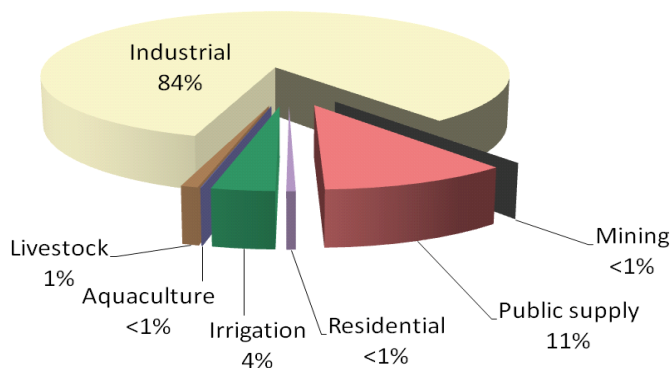


Population 34,339
 Pop served by public supply 28,850

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	7.68	7.68	Moulton Water Works Board	0.00	2.21	2.21
	0%	100%		West Morgan East Lawrence Water & Sewer Authority	0.00	5.47	5.47
Residential	0.38	0.00	0.38				
	100%	0%					
Irrigation	0.19	2.45	2.64				
	7%	93%					
Aquaculture	0.05	0.00	0.05				
	100%	0%					
Livestock	0.30	0.40	0.70				
	43%	57%					
Industrial	0.00	60.11	60.11				
	0%	100%					
Mining	0.01	0	0.01				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	0.93	70.64	71.57				
	1%	99%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	60.11	60.11



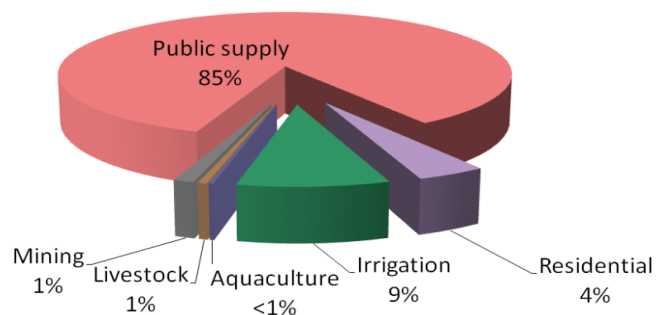
LEE



Category	GW	SW	Totals
Public Supply	1.10	14.87	15.97
	7%	93%	
Residential	0.77	0.00	0.77
	100%	0%	
Irrigation	0.18	2.25	2.43
	7%	93%	
Aquaculture	0.02	0.03	0.05
	40%	60%	
Livestock	0.04	0.06	0.10
	40%	60%	
Industrial	0.00	0.00	0.00
	0%	0%	
Mining	0.16	0.07	0.23
	70%	30%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	2.27	17.28	19.55
	12%	88%	

System Name	GW	SW	Total
Auburn Water Works Board	0.06	6.26	6.32
Beauregard Water Authority	1.04	0.00	1.04
Opelika Water Works Board	0.00	6.26	6.26
Smiths Water and Sewer Authority	0.00	2.35	2.35

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



LIMESTONE

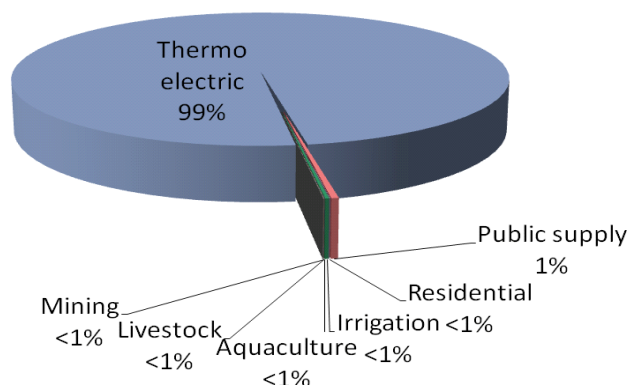


Population 82,782
 Pop served by public supply 70,080

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.71	8.12	10.83	Ardmore Water System	0.39	0.00	0.39
	25%	75%		Athens Utilities	0.00	5.16	5.16
Residential	0.68	0.00	0.68	Limestone County Water Authority	2.10	2.96	5.06
	100%	0%		Madison Water and Wastewater Board	0.18	0.00	0.18
Irrigation	1.28	4.45	5.73	Swan Creek Community	0.04	0.00	0.04
	22%	78%					
Aquaculture	0.18	0.15	0.33				
	55%	45%					
Livestock	0.16	0.21	0.37				
	43%	57%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	1.04	1.04				
	0%	100%					
Thermoelectric	0.00	2724.37	2724.37				
	0%	100%					
Totals	5.01	2738.34	2743.35				
	0%	100%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	2724.37	2724.37



LOWNDES

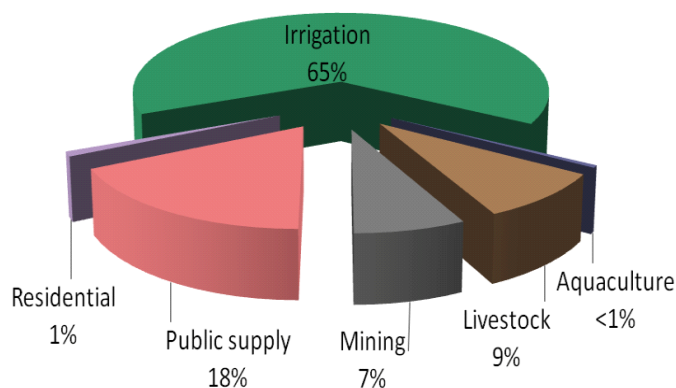


Population 11,299
Pop served by public supply 10,550

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.13	0.00	1.13	Hayneville	0.37	0.00	0.37
	100%	0%		Lowndes County Water Authority	0.38	0.00	0.38
Residential	0.06	0.00	0.06	Lowndesboro	0.09	0.00	0.09
	100%	0%		Mosses Water Authority	0.13	0.00	0.13
Irrigation	0.00	4.18	4.18	White Hall	0.16	0.00	0.16
	0%	100%					
Aquaculture	0.00	0.03	0.03				
	0%	100%					
Livestock	0.23	0.34	0.57				
	40%	60%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.31	0.15	0.46				
	67%	33%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	1.73	4.70	6.43				
	27%	73%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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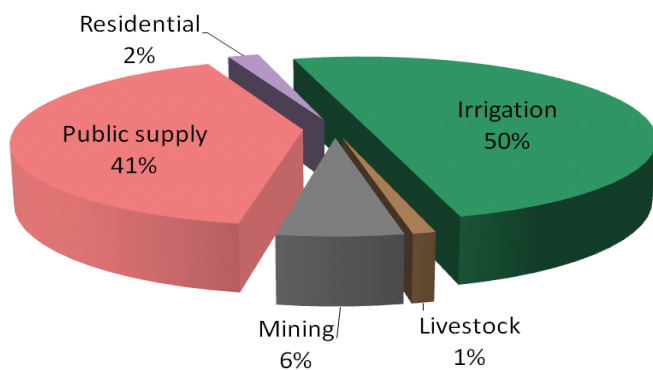
MACON



Population 21,452
Pop served by public supply 18,640

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.97	3.12	4.09	Loachapoka Water Authority	0.42	0.00	0.42
	24%	76%		Macon County Water Authority	0.49	0.00	0.49
Residential	0.20	0.00	0.20	Star Mindingall Water Authority	0.06	0.00	0.06
	100%	0%		Tuskegee Utilities	0.00	3.12	3.12
Irrigation	1.94	3.07	5.01				
	39%	61%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.04	0.07	0.11				
	36%	64%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.4	0.2	0.6				
	67%	33%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	3.55	6.46	10.01				
	35%	65%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



MADISON

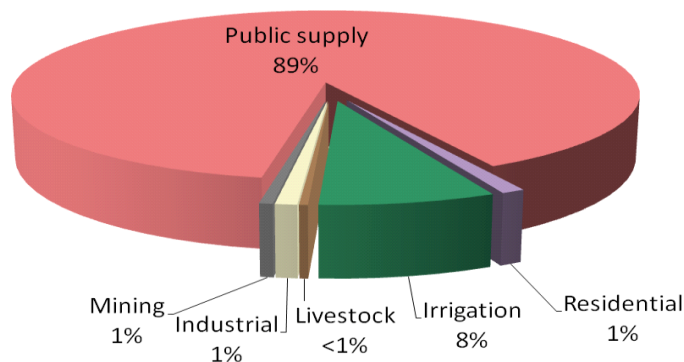


Population 334,811
Pop served by public supply 324,380

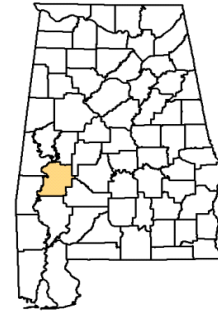
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	28.64	39.77	68.41	Harvest-Monrovia Water Authority	5.22	0.00	5.22
	42%	58%		Huntsville Utilities Water Department	7.52	38.08	45.60
Residential	0.78	0.00	0.78	Madison County Water Department	8.77	0.00	8.77
	100%	0%		Madison Water and Wastewater Board	6.01	0.00	6.01
Irrigation	3.71	3.72	7.43	Owens Cross Roads Water Authority	1.12	0.00	1.12
	50%	50%		Redstone Arsenal	0.00	1.69	1.69
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.12	0.17	0.29				
	41%	59%					
Industrial	0.00	0.73	0.73				
	0%	100%					
Mining	0.31	0.14	0.45				
	69%	31%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	33.56	44.53	78.09				
	43%	57%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Other Nonmetallic Mineral Product Manufacturing	0.00	0.73	0.73



MARENGO



Population 21,027
Pop served by public supply 12,560

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

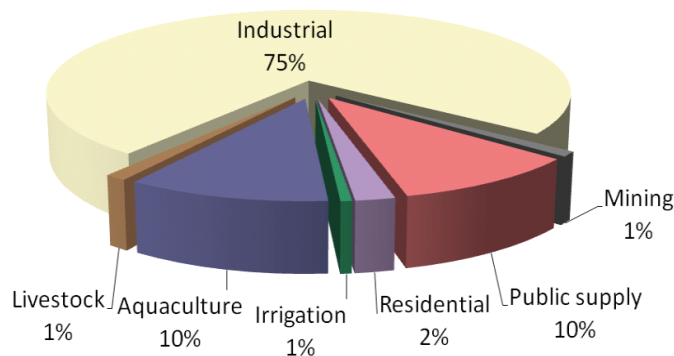
Category	GW	SW	Totals
Public Supply	2.50 100%	0.00 0%	2.50
Residential	0.52 100%	0.00 0%	0.52
Irrigation	0.01 3%	0.29 97%	0.30
Aquaculture	1.45 55%	1.19 45%	2.64
Livestock	0.11 38%	0.18 62%	0.29
Industrial	0.20 1%	18.52 99%	18.72
Mining	0.16 67%	0.08 33%	0.24
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	4.95 20%	20.26 80%	25.21

Withdrawals by Public Supplier, in MGD

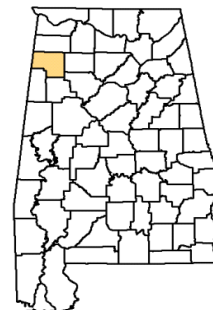
System Name	GW	SW	Total
Demopolis Water & Sewer Board	1.63	0.00	1.63
Linden Utilities Board	0.30	0.00	0.30
Myrtlewood Water System	0.28	0.00	0.28
Sweetwater	0.04	0.00	0.04
Thomaston Water & Gas Board	0.21	0.00	0.21
Town of Faunsdale	0.04	0.00	0.04

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.20	0.72	0.92
Pulp, Paper, and Paperboard Mills	0.00	17.80	17.80



MARION

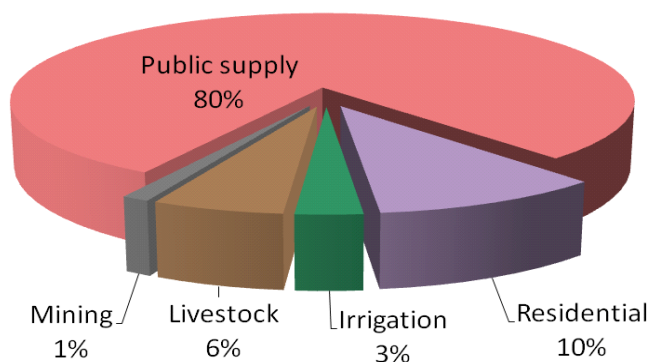


Population 30,776
Pop served by public supply 20,890

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.70	5.26	5.96	Brilliant	0.12	0.00	0.12
	12%	88%		Guin Water Works and Sewer Board	0.00	0.70	0.70
Residential	0.76	0.00	0.76	Hamilton Waterworks & Sewer Board	0.00	1.26	1.26
	100%	0%		Hodges Water Department	0.19	0.00	0.19
Irrigation	0.16	0.13	0.29	Twin Water Authority	0.08	0.00	0.08
	54%	46%		Upper Bear Creek Water Treatment Plant	0.00	2.86	2.86
Aquaculture	0.00	0.00	0.00	Winfield	0.31	0.44	0.75
	0%	0%					
Livestock	0.18	0.25	0.43				
	42%	58%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.03	0.06	0.09				
	33%	67%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	1.83	5.70	7.53				
	24%	76%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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MARSHALL

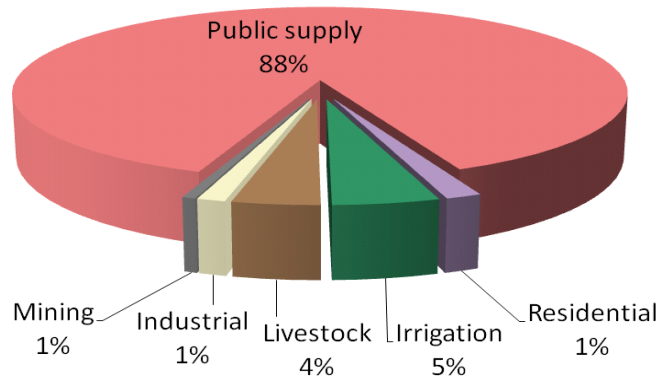


Population 93,019
Pop served by public supply 86,970

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	4.35	22.28	26.63	Albertville Municipal Utilities Board	0.00	12.38	12.38
	16%	84%		Arab Water Works Board	0.59	4.30	4.89
Residential	0.48	0.00	0.48	Douglas Water Authority	3.00	0.00	3.00
	100%	0%		Guntersville Water Works and Sewer Board	0.76	2.74	3.50
Irrigation	0.37	1.83	2.20	North Marshall Utilities	0.00	1.41	1.41
	17%	83%		Northeast Alabama Water, Sewer & F.P.A.	0.00	1.45	1.45
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.59	0.59	1.18				
	50%	50%					
Industrial	0.38	0.00	0.38				
	100%	0%					
Mining	0.12	0.06	0.18				
	67%	33%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	6.29	24.76	31.05				
	20%	80%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Animal Slaughtering and Processing	0.30	0.00	0.30
Grain and Oilseed Milling	0.08	0.00	0.08

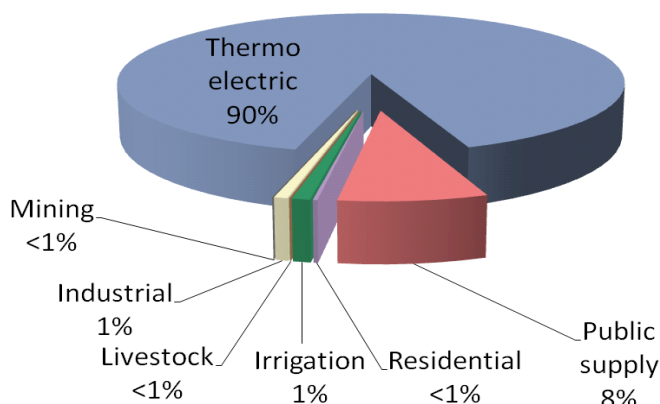


MOBILE



Population 412,992
Pop served by public supply 374,670

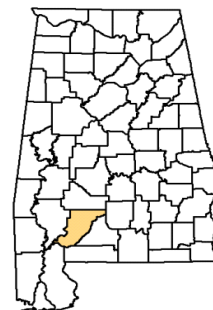
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	15.72	70.25	85.97	Bayou La Batre Utilities Board	0.65	0.00	0.65
	18%	82%		Dauphin Island Water and Sewer Authority	0.53	0.00	0.53
Residential	2.62	0.00	2.62	Grand Bay Water Works Board	0.96	0.00	0.96
	100%	0%		Kushla Water System	0.61	0.00	0.61
Irrigation	8.93	2.58	11.51	Le Moyne Water System, Inc.	0.46	0.00	0.46
	78%	22%		MCB Water Authority, Inc.	0.17	0.00	0.17
Aquaculture	0.00	0.00	0.00	Mobile Board of Water and Sewer Commissioners	0.00	70.25	70.25
	0%	0%		Mobile County	3.43	0.00	3.43
Livestock	0.13	0.16	0.29	Mount Vernon	0.26	0.00	0.26
	45%	55%		Saraland Water System	1.51	0.00	1.51
Industrial	6.90	0.70	7.60	Satsuma	0.59	0.00	0.59
	91%	9%		South Alabama Utilities	5.30	0.00	5.30
Mining	0.16	0	0.16	St. Elmo - Irvington Water Authority	0.94	0.00	0.94
	100%	0%		Turnerville Water & Fire Protection District	0.31	0.00	0.31
Thermoelectric	0.00	989.29	989.29				
	0%	100%					
Totals	34.46	1062.98	1097.44				
	3%	97%					



Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	2.05	0.00	2.05
Electric Power Generation, Transmission and Distribution	0.00	989.29	989.29
Fabric Mills	0.87	0.00	0.87
Iron and Steel Mills and Ferroalloy Manufacturing	1.03	0.70	1.73
Other Wood Product Manufacturing	0.00	0.00	0.00
Paint, Coating, and Adhesive Manufacturing	2.07	0.00	2.07
Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	0.51	0.00	0.51
Petroleum and Coal Products Manufacturing	0.37	0.00	0.37
Seafood Product Preparation and Packaging	0.00	0.00	0.00

MONROE

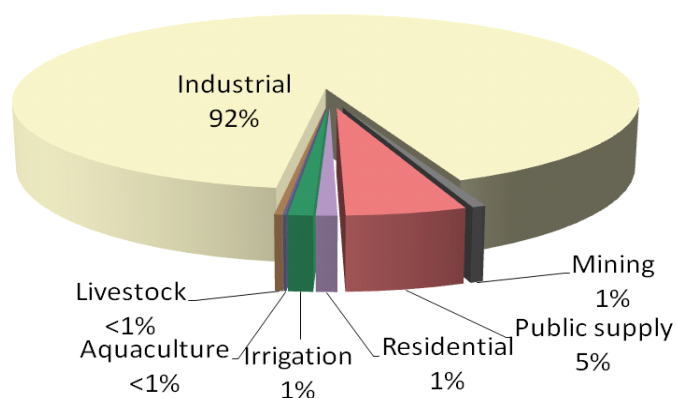


Population 23,068
Pop served by public supply 17,170

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.65	0.00	2.65	Beatrice Water System	0.11	0.00	0.11
	100%	0%		Excel	0.29	0.00	0.29
Residential	0.47	0.00	0.47	Frisco City Water Works Board	0.32	0.00	0.32
	100%	0%		Monroeville	1.24	0.00	1.24
Irrigation	0.49	0.13	0.62	Southwest Alabama Water Authority	0.45	0.00	0.45
	79%	21%		Uriah Water System	0.24	0.00	0.24
Aquaculture	0.03	0.03	0.06				
	50%	50%					
Livestock	0.07	0.11	0.18				
	39%	61%					
Industrial	0.13	46.42	46.55				
	0%	100%					
Mining	0.3	0	0.3				
	100%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	4.14	46.69	50.83				
	8%	92%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	46.29	46.29
Veneer, Plywood, and Engineered Wood Product Manufacturing	0.13	0.13	0.26



MONTGOMERY

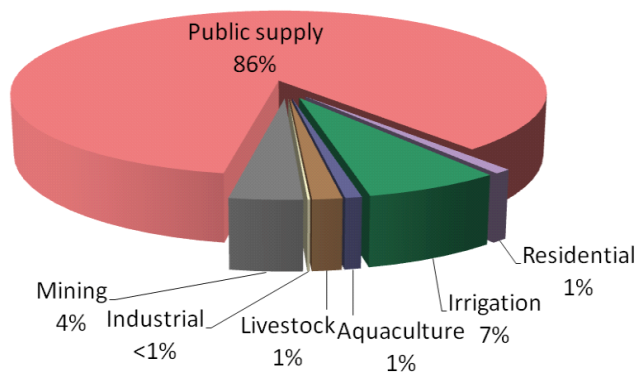


Population 229,363
Pop served by public supply 224,630

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	13.87	19.47	33.34	Montgomery Water Works Sanitary			
	42%	58%		Sewer Board	12.63	19.47	32.10
Residential	0.34	0.00	0.34	Pilgrim Providence Water and			
	100%	0%		F.P.A.	0.05	0.00	0.05
Irrigation	1.74	1.72	3.46	Pine Level Water	0.22	0.00	0.22
	50%	50%		Pintlala	0.62	0.00	0.62
Aquaculture	0.16	0.17	0.33	Ramer Water Co., Inc.	0.07	0.00	0.07
	48%	52%		Snowdown Water System Inc.	0.28	0.00	0.28
Livestock	0.24	0.35	0.59				
	41%	59%					
Industrial	0.04	0.01	0.05				
	80%	20%					
Mining	0.98	0.46	1.44				
	68%	32%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	17.37	22.18	39.55				
	44%	56%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
National Security and International Affairs	0.04	0.01	0.05



MORGAN



Population 119,490
Pop served by public supply 115,470

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

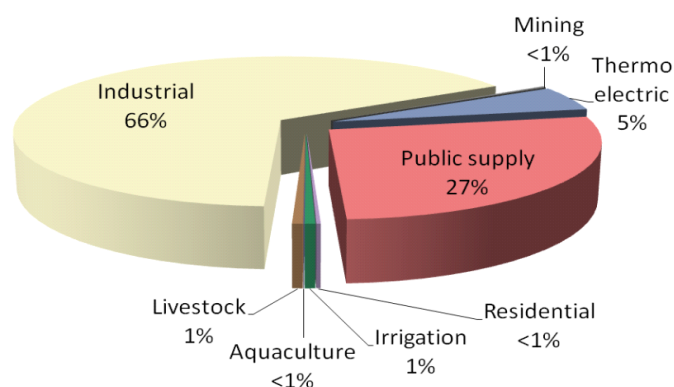
Category	GW	SW	Totals
Public Supply	0.00 0%	33.38 100%	33.38
Residential	0.28 100%	0.00 0%	0.28
Irrigation	0.14 12%	1.00 88%	1.14
Aquaculture	0.02 50%	0.02 50%	0.04
Livestock	0.30 45%	0.37 55%	0.67
Industrial	0.00 0%	78.02 100%	78.02
Mining	0.26 68%	0.12 32%	0.38
Thermoelectric	0.00 0%	6.43 100%	6.43
Totals	1.00 1%	119.34 99%	120.34

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Decatur Utilities	0.00	33.38	33.38

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.00	73.67	73.67
Plastics Product Manufacturing	0.00	3.39	3.39
Electric Power Generation, Transmission and Distribution	0.00	4.35	4.35



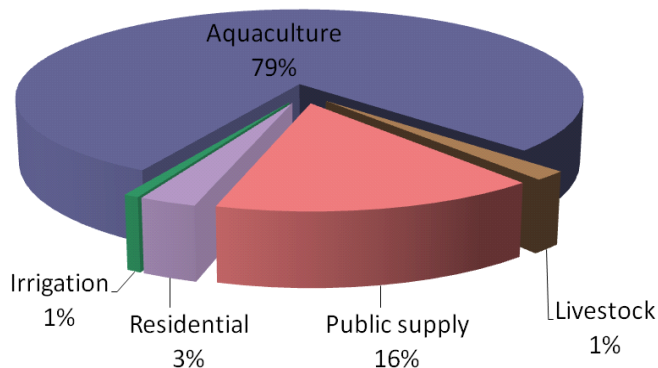
PERRY

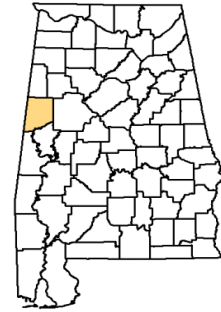


Population 10,591
Pop served by public supply 6,370

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.70	0.00	1.70	City of Marion	0.73	0.00	0.73
	100%	0%		Perry County Water Authority	0.20	0.00	0.20
Residential	0.30	0.00	0.30	Town of Uniontown	0.77	0.00	0.77
	100%	0%					
Irrigation	0.06	0.02	0.08				
	77%	23%					
Aquaculture	4.58	4.01	8.59				
	53%	47%					
Livestock	0.08	0.10	0.18				
	44%	56%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	6.72	4.13	10.85				
	62%	38%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



PICKENS

Population 19,746
 Pop served by public supply 15,460

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

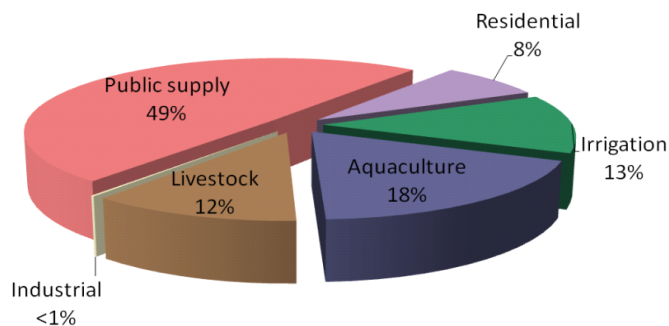
Category	GW	SW	Totals
Public Supply	2.70 100%	0.00 0%	2.70
Residential	0.42 100%	0.00 0%	0.42
Irrigation	0.00 0%	0.78 100%	0.78
Aquaculture	0.50 50%	0.50 50%	1.00
Livestock	0.31 49%	0.32 51%	0.63
Industrial	0.01 100%	0.00 0%	0.01
Mining	0 0%	0 0%	0
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	3.94 71%	1.60 29%	5.54

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Aliceville Water and Sewer Board	0.91	0.00	0.91
Gordo	0.35	0.00	0.35
Pickens County Water Authority	0.99	0.00	0.99
Reform	0.45	0.00	0.45

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Sawmills and Wood Preservation	0.01	0.00	0.01



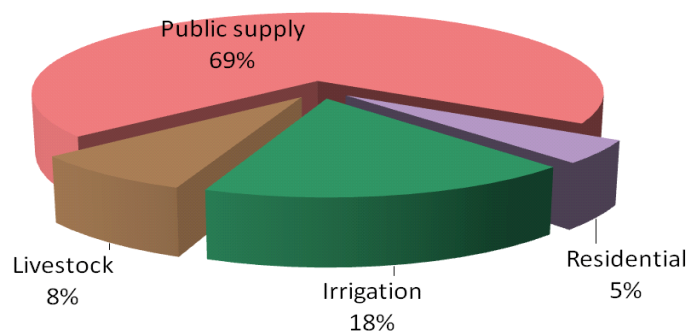
PIKE



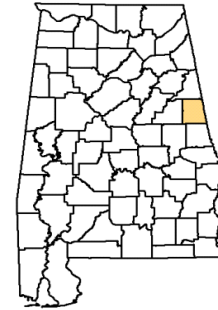
Population 32,899
Pop served by public supply 28,920

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	5.01	0.00	5.01	Brundidge	0.39	0.00	0.39
	100%	0%		Goshen	0.03	0.00	0.03
Residential	0.33	0.00	0.33	Pike County Water Authority	1.08	0.00	1.08
	100%	0%		Town of Banks Water	0.14	0.00	0.14
Irrigation	0.43	1.04	1.47	Troy Utility Department	3.37	0.00	3.37
	29%	71%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.24	0.34	0.58				
	41%	59%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	6.01	1.38	7.39				
	81%	19%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



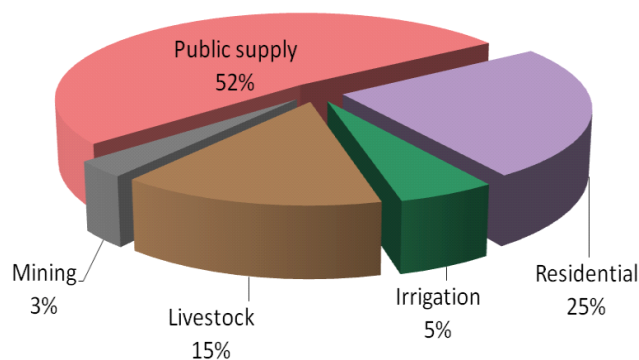
RANDOLPH



Population 22,913
Pop served by public supply 12,130

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	1.51	1.51	Roanoke Utilities Board	0.00	1.05	1.05
	0%	100%		Wedowee Water, Sewer, & Gas Board	0.00	0.46	0.46
Residential	0.72	0.00	0.72				
	100%	0%					
Irrigation	0.08	0.08	0.16				
	51%	49%					
Aquaculture	0.00	0.00	0.00				
	0%	0%					
Livestock	0.20	0.23	0.43				
	47%	53%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0.06	0.03	0.09				
	67%	33%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	1.06	1.85	2.91				
	36%	64%					

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total



RUSSELL

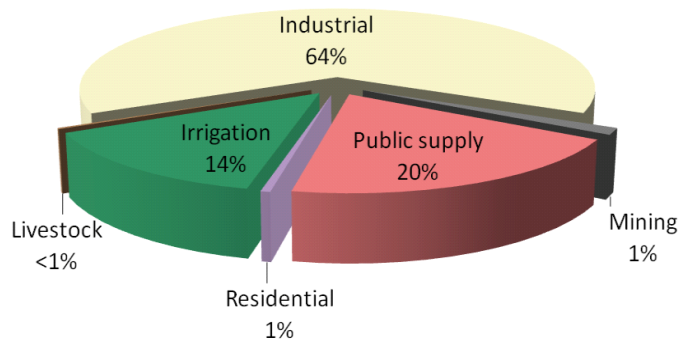


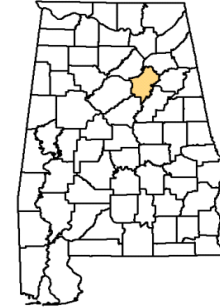
Population 52,947
Pop served by public supply 48,720

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.48 17%	7.32 83%	8.80	Columbus Water Works (Uchee Creek Campground and Marina)	0.15	0.00	0.15
Residential	0.23 100%	0.00 0%	0.23	Fort Mitchell	0.68	0.00	0.68
Irrigation	0.00 0%	6.49 100%	6.49	Hurtsboro Water and Sewer Board	0.11	0.00	0.11
Aquaculture	0.00 0%	0.00 0%	0.00	Phenix City Utilities	0.00	7.32	7.32
Livestock	0.04 40%	0.06 60%	0.10	Russell County Water Authority	0.54	0.00	0.54
Industrial	0.92 3%	27.63 97%	28.55				
Mining	0.39 67%	0.19 33%	0.58				
Thermoelectric	0.00 0%	0.00 0%	0.00				
Totals	3.06 7%	41.69 93%	44.75				

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.00	0.00	0.00
Cement and Concrete Product			
Manufacturing	0.00	0.00	0.00
Pulp, Paper, and Paperboard Mills	0.92	27.63	28.55



ST. CLAIR

Population 83,593
 Pop served by public supply 74,580

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

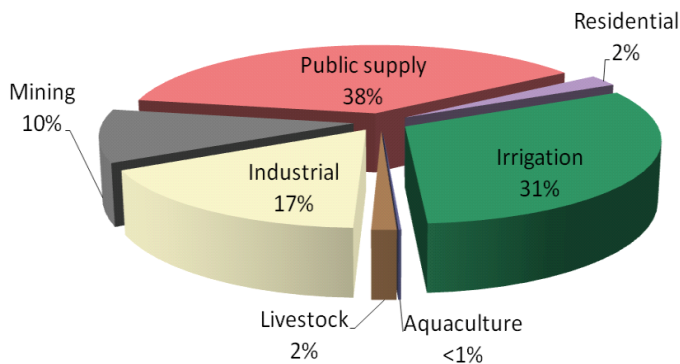
Category	GW	SW	Totals
Public Supply	9.62 97%	0.31 3%	9.93
Residential	0.59 100%	0.00 0%	0.59
Irrigation	0.00 0%	8.62 100%	8.62
Aquaculture	0.00 0%	0.04 100%	0.04
Livestock	0.15 42%	0.21 58%	0.36
Industrial	0.00 0%	4.45 100%	4.45
Mining	2.71 100%	0 0%	2.71
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	13.07 49%	13.63 51%	26.70

Withdrawals by Public Supplier, in MGD

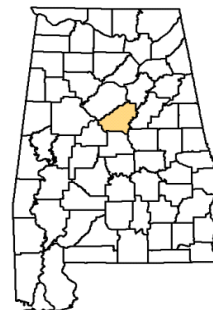
System Name	GW	SW	Total
Ashville Water and Sewer	0.23	0.31	0.54
Leeds	0.84	0.00	0.84
New London Water Authority	0.63	0.00	0.63
Pell City	2.33	0.00	2.33
Ragland Water Works Board	0.47	0.00	0.47
Springville	0.48	0.00	0.48
Town of Riverside	0.39	0.00	0.39
Odenville Utilities Board	3.65	0.00	3.65
Wattsville Water Authority	0.60	0.00	0.60

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Cement and Concrete Product Manufacturing	0.00	4.45	4.45



SHELBY

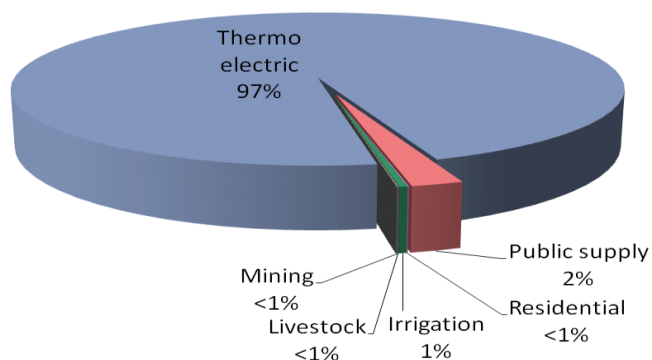


Population 195,085
Pop served by public supply 188,240

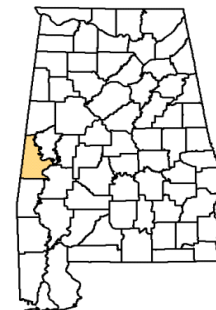
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	13.26	2.63	15.89	Alabaster Water Board	3.87	0.00	3.87
	83%	17%		Calera	1.81	0.00	1.81
Residential	0.41	0.00	0.41	Columbiana Water Works Board	0.97	0.00	0.97
	100%	0%		Harpersville Water Board	0.18	0.00	0.18
Irrigation	0.98	1.12	2.10	Helena Utility Board	1.29	0.00	1.29
	47%	53%		Montevallo Water Works & Sewer Board	1.11	0.00	1.11
Aquaculture	0.00	0.00	0.00	Pelham Water Works	3.13	0.00	3.13
	0%	0%		Shelby County Water Services	0.00	2.63	2.63
Livestock	0.04	0.06	0.10	Vincent Water Board	0.24	0.00	0.24
	40%	60%		Wilsonville Waterworks - Town of Wilsonville	0.16	0.00	0.16
Industrial	0.00	0.00	0.00	Wilton Water Works	0.50	0.00	0.50
	0%	0%					
Mining	0.41	0.2	0.61				
	67%	33%					
Thermoelectric	0.00	666.25	666.25				
	0%	100%					
Totals	15.10	670.26	685.36				
	2%	98%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	666.25	666.25



SUMTER

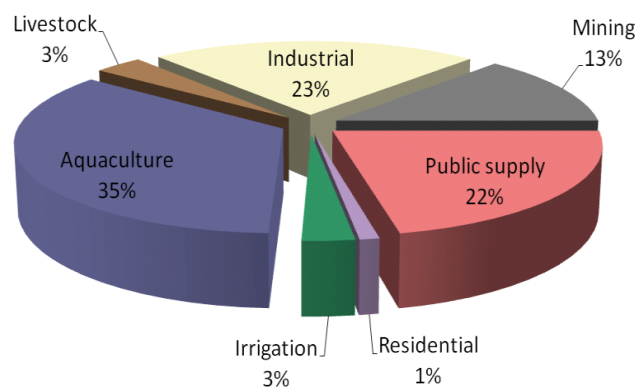


Population 13,763
Pop served by public supply 12,580

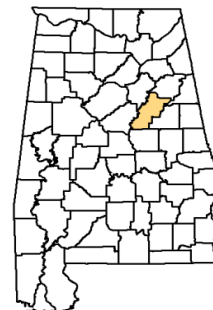
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.90	0.00	1.90	City of York	0.06	0.00	0.06
	100%	0%		Livingston Utility Board	0.94	0.00	0.94
Residential	0.09	0.00	0.09	Sumter County Water Authority	0.90	0.00	0.90
	100%	0%					
Irrigation	0.19	0.15	0.34				
	56%	44%					
Aquaculture	1.49	1.55	3.04				
	49%	51%					
Livestock	0.12	0.18	0.30				
	40%	60%					
Industrial	0.00	0.92	0.92				
	0%	100%					
Mining	0.78	1.47	2.25				
	35%	65%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	4.57	4.27	8.84				
	52%	48%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Nonmetallic Mineral Mining and Quarrying	0.00	1.11	1.11
Pulp, Paper, and Paperboard Mills	0.00	0.92	0.92



TALLADEGA

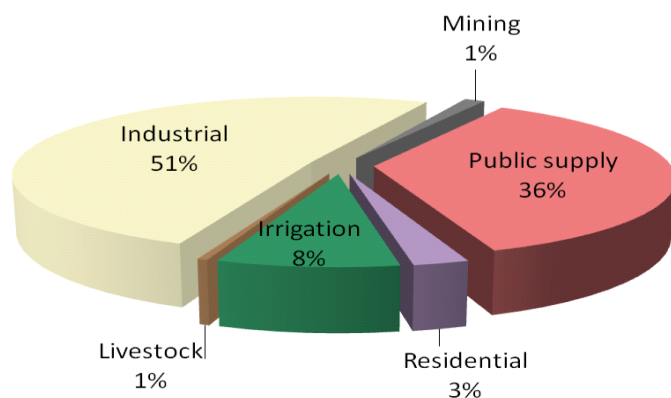


Population 82,291
Pop served by public supply 61,880

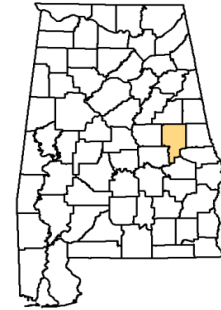
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	9.52	8.02	17.54	Central Talladega County Water District	0.27	0.00	0.27
	54%	46%		Childersburg Water, Sewer & Gas Board	1.37	0.00	1.37
Residential	1.24	0.00	1.24	City of Talladega Water and Sewer Department	2.69	0.99	3.68
	100%	0%		Fayetteville Water Authority	0.30	0.00	0.30
Irrigation	0.38	4.42	4.80	Lincoln	2.10	0.00	2.10
	8%	92%		Munford Water Authority, Inc.	0.15	0.00	0.15
Aquaculture	0.00	0.00	0.00	Sycamore Water and Sewer Authority	0.13	0.00	0.13
	0%	0%		Talladega County Water Dept.	0.00	0.82	0.82
Livestock	0.10	0.13	0.23	Talladega/Shelby Water Treatment Plant	0.00	5.33	5.33
	43%	57%		Utilities Board, City of Sylacauga	2.46	0.88	3.34
Industrial	0.00	24.67	24.67	Waterworks, Inc	0.05	0.00	0.05
	0%	100%					
Mining	0.42	0.2	0.62				
	68%	32%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	11.66	37.44	49.10				
	24%	76%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	24.67	24.67



TALLAPOOSA

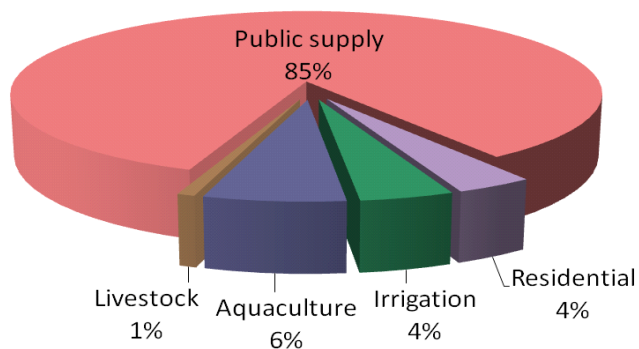


Population 41,616
Pop served by public supply 35,530

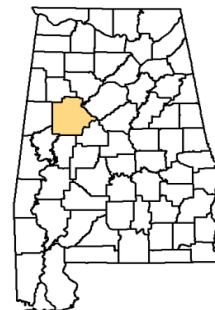
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	10.38	10.38	Alexander City Water Department	0.00	8.53	8.53
	0%	100%		Tallassee	0.00	1.85	1.85
Residential	0.44	0.00	0.44				
	100%	0%					
Irrigation	0.14	0.47	0.61				
	23%	77%					
Aquaculture	0.02	0.78	0.80				
	3%	98%					
Livestock	0.04	0.06	0.10				
	40%	60%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Mining	0	0	0				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	0.64	11.69	12.33				
	5%	95%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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TUSCALOOSA

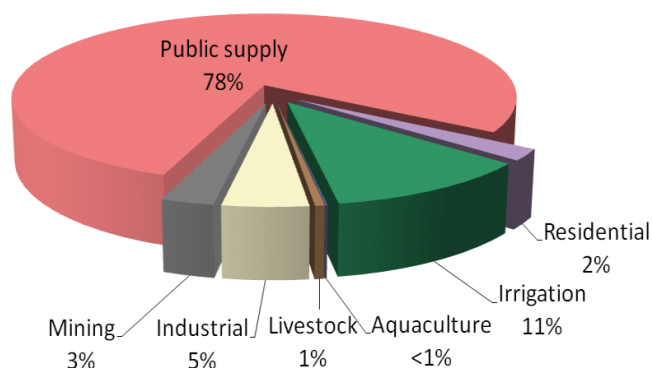


Population 194,656
Pop served by public supply 183,180

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	1.47	28.45	29.92	Buhl, Elrod and Holman Water Authority	0.34	0.00	0.34
	5%	95%		City of Northport	0.00	3.64	3.64
Residential	0.82	0.00	0.82	Coker Water Authority	0.36	0.00	0.36
	100%	0%		Green Pond Water System Inc	0.77	0.00	0.77
Irrigation	1.10	3.99	5.09	Tuscaloosa Water and Sewer Department	0.00	24.81	24.81
	22%	78%					
Aquaculture	0.04	0.00	0.04				
	100%	0%					
Livestock	0.09	0.11	0.20				
	45%	55%					
Industrial	0.74	1.04	1.78				
	42%	58%					
Mining	0	1.09	1.09				
	0%	100%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	4.26	34.68	38.94				
	11%	89%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Petroleum and Coal Products			
Manufacturing	0.74	0.86	1.60
Rubber Product Manufacturing	0.00	0.18	0.18



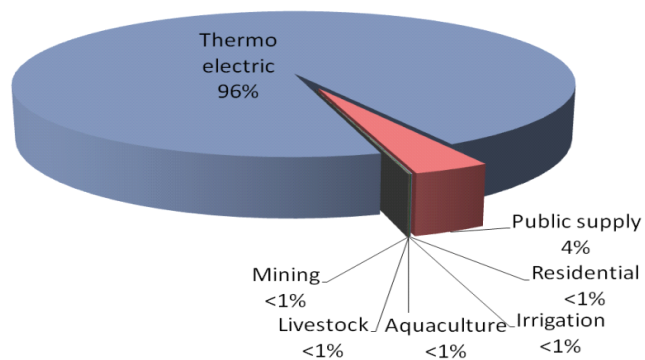
WALKER



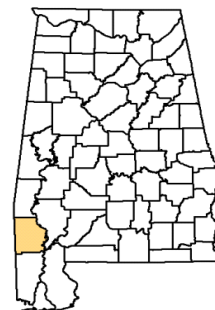
Population 67,023
 Pop served by public supply 59,430

Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.16 0%	35.59 100%	35.75	Birmingham WWB	0.00	24.41	24.41
Residential	0.44 100%	0.00 0%	0.44	Eldridge Water Department	0.16	0.00	0.16
Irrigation	0.22 31%	0.49 69%	0.71	Jasper Waterworks and Sewer Board	0.00	11.18	11.18
Aquaculture	0.01 33%	0.02 67%	0.03				
Livestock	0.12 43%	0.16 57%	0.28				
Industrial	0.00 0%	0.00 0%	0.00				
Mining	0.12 24%	0.37 76%	0.49				
Thermoelectric	0.00 0%	922.15 100%	922.15				
Totals	1.07 0%	958.78 100%	959.85				

Withdrawals by North American Industry Classification , in MGD			
Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	922.15	922.15



WASHINGTON

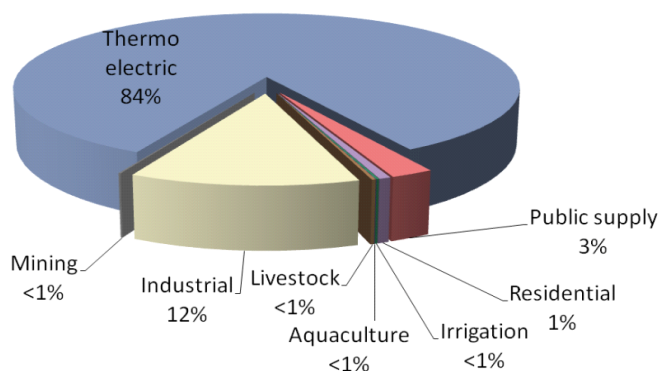


Population 17,581
Pop served by public supply 9,940

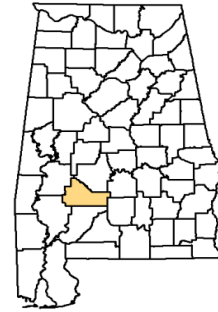
Withdrawals, in Million Gallons per Day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	2.07	0.00	2.07	Chatom Utilities Board	0.24	0.00	0.24
	100%	0%		Deer Park & Vinegar Blend Water & FPA	0.10	0.00	0.10
Residential	0.56	0.00	0.56	Frankville Water & Fire Protection Authority	0.10	0.00	0.10
	100%	0%		Leroy Water Authority	0.23	0.00	0.23
Irrigation	0.09	0.02	0.11	McIntosh Water & Fire Protection Authority	0.44	0.00	0.44
	83%	17%		Milry Water Works	0.23	0.00	0.23
Aquaculture	0.03	0.00	0.03	South Alabama Utilities	0.12	0.00	0.12
	100%	0%		St. Stephens Water System	0.07	0.00	0.07
Livestock	0.09	0.10	0.19	Wagarville Water Systems, Inc.	0.37	0.00	0.37
	47%	53%		Washington County Water Authority	0.17	0.00	0.17
Industrial	6.16	4.87	11.03				
	56%	44%					
Mining	0.11	0	0.11				
	100%	0%					
Thermoelectric	0.00	75.54	75.54				
	0%	100%					
Totals	9.11	80.53	89.64				
	10%	90%					

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	4.30	0.00	4.30
Electric Power Generation, Transmission and Distribution	0.00	75.54	75.54
Paint, Coating, and Adhesive Manufacturing	1.86	4.87	6.73



WILCOX



Population 11,670
Pop served by public supply 7,200

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

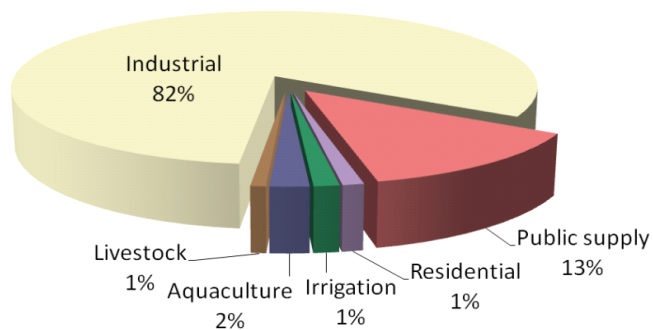
Category	GW	SW	Totals
Public Supply	1.12 38%	1.82 62%	2.94
Residential	0.25 100%	0.00 0%	0.25
Irrigation	0.08 27%	0.22 73%	0.30
Aquaculture	0.23 50%	0.23 50%	0.46
Livestock	0.07 39%	0.11 61%	0.18
Industrial	0.00 0%	18.31 100%	18.31
Mining	0 0%	0 0%	0
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	1.75 8%	20.69 92%	22.44

Withdrawals by Public Supplier, in MGD

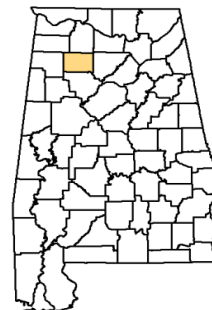
System Name	GW	SW	Total
Camden	0.57	0.00	0.57
Millers Ferry Water Authority	0.07	0.00	0.07
Pine Apple Water Works	0.02	0.00	0.02
Pine Hill	0.00	1.82	1.82
Wilcox County Water System	0.46	0.00	0.46

Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	18.31	18.31



WINSTON



Population 24,484
Pop served by public supply 15,860

Withdrawals, in Million Gallons per Day (MGD) and percent (%)

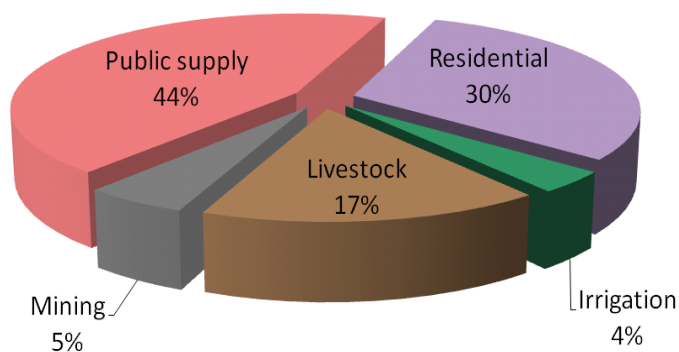
Category	GW	SW	Totals
Public Supply	0.00 0%	0.97 100%	0.97
Residential	0.66 100%	0.00 0%	0.66
Irrigation	0.00 0%	0.15 100%	0.15
Aquaculture	0.00 0%	0.00 0%	0.00
Livestock	0.17 47%	0.19 53%	0.36
Industrial	0.00 0%	0.00 0%	0.00
Mining	0.11 100%	0 0%	0.11
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	0.94 42%	1.31 58%	2.25

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
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Withdrawals by North American Industry Classification , in MGD

Industry Group	GW	SW	Total
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Appendix B.

Alabama Water Use by Subbasin

The following one-page summaries of water-use information by hydrologic subbasin present withdrawals by public suppliers, major North American Industrial Classification System (NAICS) groups, and water-use categories. See the first example on the following Middle Chattahoochee–Lake Harding page. Each page contains a map of Alabama with the referenced subbasin highlighted, estimated population of that subbasin, and a summary of water use data for five specific water-use categories (Public Supply, Irrigation, Livestock, Industrial, and Thermoelectric). Three categories (Self-Supplied Residential, Aquaculture, and Mining) lacked information detail to develop adequate water use summaries and were excluded from the subbasin analysis process.

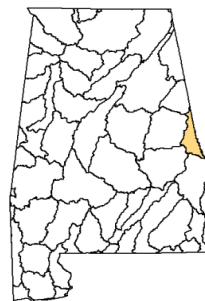
The data on each of the following subbasin summary pages contain the average daily withdrawals for the five water-use categories analyzed (Public Supply, Irrigation, Livestock, Industrial, and Thermoelectric). The withdrawals are also totaled by source of water used (groundwater [GW] or surface water [SW]) and the associated percentage that use represents.

Further, each public supplier is listed by the subbasin in which the withdrawal occurs. Therefore, a public supplier may be listed in more than one subbasin depending on the location of its water sources. For example, Birmingham Water Works Board withdraws water from the Upper Coosa (03150105), Mulberry (03160109), Sipsey Fork (03160110), and Locust (03160111) subbasins, and is therefore listed on each of the corresponding subbasin pages. Information is also provided for withdrawals as classified under the North American Industry Classification System (NAICS).

In the tables, public suppliers, categories, and major NAICS groups were listed as withdrawing 0.00 MGD if the withdrawal was less than 0.01 MGD. As a result, some totaled withdrawals from these tables may be less than the totals for public supply or industry in the water-use-category table. Numbers may not sum to total withdrawals because of rounding. No site-specific water withdrawals were reported for the Upper Chickasawhay (0317002, land area 65.1 square miles), Lower Chickasawhay (0317003, land area 0.7 square mile), or Upper Elk (0603003, land area 0.4 square mile) subbasins, and no water-withdrawal estimates were determined for the aquaculture, livestock, mining, or self-supplied residential categories because of the relatively small land areas of these subbasins. Major NAICS groups include the water-use categories of commercial, industrial, and thermoelectric power.

Basin Number
03130002

Basin Name
**Middle Chattahoochee
Lake Harding**

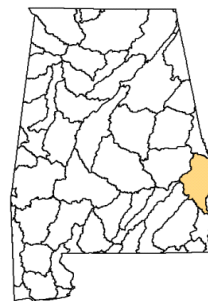


Estimated Population 51,634

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	0.00	12.39	12.39
	0%	100%	
Irrigation	0.17	0.37	0.54
	31%	0%	
Livestock	0.07	0.11	0.18
	39%	61%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	0.24	12.87	13.11
	2%	98%	

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Chattahoochee Valley Water Supply District	0.00	3.78	3.78
Opelika Water Works Board	0.00	6.26	6.26
Smiths Water and Sewer Authority	0.00	2.35	2.35

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Basin Number
03130003Basin Name
**Middle Chattahoochee
Walter F. George**

Estimated Population

106,825

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	3.70	7.32	11.02
	34%	66%	
Irrigation	0.77	8.60	9.37
	8%	0%	
Livestock	0.14	0.22	0.36
	39%	61%	
Industrial	2.49	27.63	30.12
	8%	92%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	7.10	43.77	50.87
	14%	86%	

Withdrawals by Public Supplier, in MGD

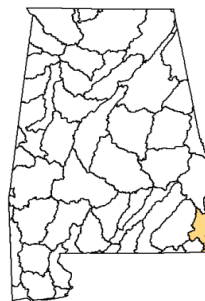
System Name	GW	SW	Total
Baker Hill Water Authority	0.18	0.00	0.18
Columbus Water Works (Uchee Creek Campground and Marina)	0.15	0.00	0.15
Cowikee Water	0.12	0.00	0.12
Eufaula Water Works and Sewer Board	1.92	0.00	1.92
Fort Mitchell	0.68	0.00	0.68
Huntsboro Water and Sewer Board	0.11	0.00	0.11
Phenix City Utilities	0.00	7.32	7.32
Russell County Water Authority	0.54	0.00	0.54

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Animal Slaughtering and Processing	1.57	0.00	1.57
Basic Chemical Manufacturing	0.00	0.00	0.00
Cement and Concrete Product Manufacturing	0.00	0.00	0.00
Pulp, Paper, and Paperboard Mills	0.92	27.63	28.55

Basin Number
03130004

Basin Name
Lower Chattahoochee



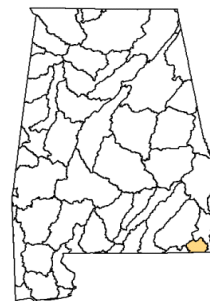
Estimated Population

32,219

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	9.94 100%	0.00 0%	9.94
Irrigation	3.83 58%	2.80 0%	6.63
Livestock	0.12 39%	0.19 61%	0.31
Industrial	0.44 100%	0.00 0%	0.44
Thermoelectric	0.00 0%	89.30 100%	89.30
Totals	14.33 13%	92.29 87%	106.62

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Abbeville Waterworks and Sewer Board	0.55	0.00	0.55
Ashford	0.14	0.00	0.14
Columbia Water Works & Sewer Board	0.08	0.00	0.08
Dothan Water System	7.75	0.00	7.75
Gordon Water Works	0.03	0.00	0.03
Headland Water Works Board	0.26	0.00	0.26
Henry County Water Authority	0.74	0.00	0.74
Kinsey	0.13	0.00	0.13
Newville	0.07	0.00	0.07
Webb Water System	0.19	0.00	0.19

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.17	89.30	89.47
Other Food Manufacturing	0.27	0.00	0.27

Basin Number
03130012Basin Name
Chipola

Estimated Population

30,787

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	2.61 100%	0.00 0%	2.61
Irrigation	3.47 80%	0.88 0%	4.35
Livestock	0.06 40%	0.09 60%	0.15
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	6.14 86%	0.97 14%	7.11

Withdrawals by Public Supplier, in MGD

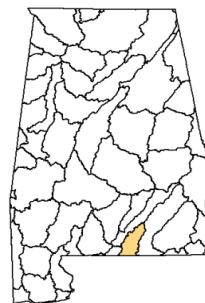
System Name	GW	SW	Total
Ashford	0.11	0.00	0.11
Cottonwood	0.31	0.00	0.31
Cowarts	0.34	0.00	0.34
Dothan Water System	1.17	0.00	1.17
Houston County Water Authority	0.39	0.00	0.39
Town of Taylor	0.29	0.00	0.29

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03140103

Basin Name
Yellow



Estimated Population

19,325

Withdrawals, in Million Gallons per day (MGD) and percent (%)

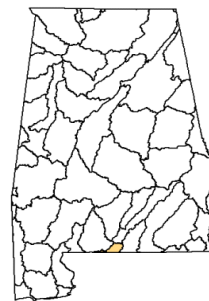
Category	GW	SW	Totals
Public Supply	1.43	0.00	1.43
	100%	0%	
Irrigation	0.44	0.74	1.18
	37%	0%	
Livestock	0.13	0.18	0.31
	42%	58%	
Industrial	0.05	0.00	0.05
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	2.05	0.92	2.97
	69%	31%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Covington County Water			
Department	0.44	0.00	0.44
Lockhart	0.08	0.00	0.08
Opp Utilities Board	0.65	0.00	0.65
Utility Board of the City of			
Andalusia	0.26	0.00	0.26

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Apparel Accessories and Other			
Apparel Manufacturing	0.05	0.00	0.05
Electric Power Generation, Transmission and Distribution	0.00	0.00	0.00

Basin Number
03140104Basin Name
Blackwater

Estimated Population

1,067

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	0.07 100%	0.00 0%	0.07
Irrigation	0.15 58%	0.11 0%	0.26
Livestock	0.02 40%	0.03 60%	0.05
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	0.24 63%	0.14 37%	0.38

Withdrawals by Public Supplier, in MGD

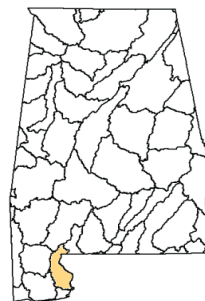
System Name	GW	SW	Total
Covington County Water Department	0.07	0.00	0.07

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03140106

Basin Name
Perdido

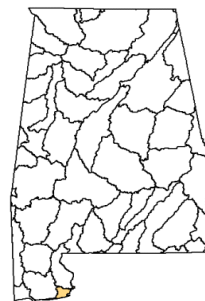


Estimated Population 34,649

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	3.94	0.00	3.94
	100%	0%	
Irrigation	12.12	2.16	14.28
	85%	0%	
Livestock	0.06	0.07	0.13
	46%	54%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	16.12	2.23	18.35
	88%	12%	

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Atmore Utility Board	1.29	0.00	1.29
East Central Baldwin Water	0.31	0.00	0.31
Loxley	0.31	0.00	0.31
North Baldwin Utilities	1.58	0.00	1.58
Robertsdale	0.35	0.00	0.35
Summerdale Water Department	0.10	0.00	0.10

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Basin Number
03140107Basin Name
Perdido Bay

Estimated Population

29,923

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	6.16 100%	0.00 0%	6.16
Irrigation	3.14 68%	1.48 0%	4.62
Livestock	0.01 33%	0.02 67%	0.03
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	9.31 86%	1.50 14%	10.81

Withdrawals by Public Supplier, in MGD

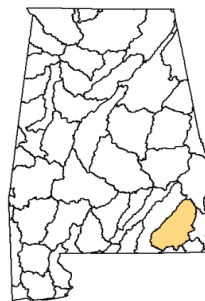
System Name	GW	SW	Total
Elberta Water System	0.07	0.00	0.07
Gulf Shores Utilities Board	1.31	0.00	1.31
Orange Beach Water, Sewer & Fire Protection	2.39	0.00	2.39
Perdido Bay Water, Sewer & Fire Protection District	0.47	0.00	0.47
Riviera Utilities	1.92	0.00	1.92

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03140201

Basin Name
Upper Choctawhatchee

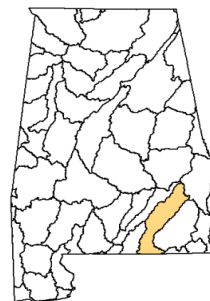


Estimated Population 160,577

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	20.93 100%	0.00 0%	20.93
Irrigation	2.84 32%	6.13 0%	8.97
Livestock	0.54 43%	0.73 57%	1.27
Industrial	1.35 100%	0.00 0%	1.35
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	25.66 79%	6.86 21%	32.52

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total
Animal Slaughtering and Processing	1.08	0.00	1.08
Other Food Manufacturing	0.27	0.00	0.27

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Abbeville Waterworks and Sewer Board	0.00	0.00	0.00
American Water Enterprises, Inc.	1.65	0.00	1.65
Ariton Water Department	0.09	0.00	0.09
Baker Hill Water Authority	0.40	0.00	0.40
Bellwood Water & F.P.A.	0.03	0.00	0.03
Blue Springs	0.07	0.00	0.07
Clayton Water Works and Sewer Board	0.12	0.00	0.12
Clio Water Works	0.51	0.00	0.51
Coffee Springs	0.02	0.00	0.02
Dale County Water Authority	0.63	0.00	0.63
Daleville	0.33	0.00	0.33
Dothan Water System	6.59	0.00	6.59
Enterprise Water Works Board	5.50	0.00	5.50
Geneva Water Works	0.17	0.00	0.17
Hartford	0.15	0.00	0.15
Headland Water Works Board	0.18	0.00	0.18
Malvern	0.12	0.00	0.12
Midland City	0.30	0.00	0.30
New Brockton Water & Sewer Board	0.54	0.00	0.54
Newton Water and Sewer Board	0.17	0.00	0.17
North Geneva County Water Authority	0.07	0.00	0.07
Ozark Utilities Board	2.47	0.00	2.47
Pinckard	0.11	0.00	0.11
Slocumb Water Works	0.04	0.00	0.04
Town of Coffee Springs	0.02	0.00	0.02
Town of Level Plains	0.33	0.00	0.33
Town of Taylor	0.32	0.00	0.32

Basin Number
03140202Basin Name
Pea

Estimated Population

54,662

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	6.66	0.00	6.66
	100%	0%	
Irrigation	1.60	3.25	4.85
	33%	0%	
Livestock	0.53	0.73	1.26
	42%	58%	
Industrial	1.14	0.00	1.14
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	9.93	3.98	13.91
	71%	29%	

Withdrawals by North American Industry Classification, in MGD

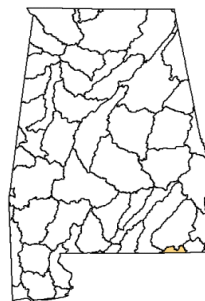
Industry Group	GW	SW	Total
Animal Slaughtering and Processing	1.14	0.00	1.14

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Ariton Water Department	0.02	0.00	0.02
Brundidge	0.39	0.00	0.39
Clayton Water Works and Sewer Board	0.38	0.00	0.38
Coffee County Water Authority	0.19	0.00	0.19
Elba Water and Electric Board	0.68	0.00	0.68
Eufaula Water Works and Sewer Board	0.17	0.00	0.17
Floral Water Board	0.47	0.00	0.47
Geneva Water Works	0.23	0.00	0.23
Jack Water System Inc	0.13	0.00	0.13
Kinston Water	0.07	0.00	0.07
Louisville Water Works	0.19	0.00	0.19
Midway Water Works	0.12	0.00	0.12
New Brockton Water & Sewer Board	0.11	0.00	0.11
New Hope Water System, Inc.	0.07	0.00	0.07
Opp Utilities Board	0.32	0.00	0.32
Pike County Water Authority	0.48	0.00	0.48
Samson (City of)	0.23	0.00	0.23
Town of Banks Water	0.14	0.00	0.14
Troy Utility Department	2.18	0.00	2.18
West Barbour County Water Authority	0.09	0.00	0.09

Basin Number
03140203

Basin Name
Lower Choctawhatchee

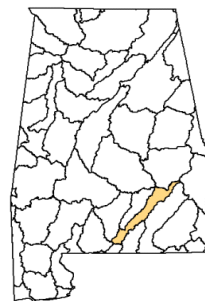


Estimated Population 6,220

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	0.58 100%	0.00 0%	0.58
Irrigation	0.36 49%	0.37 0%	0.73
Livestock	0.08 44%	0.10 56%	0.18
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	1.02 68%	0.47 32%	1.49

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Black Water Works	0.02	0.00	0.02
Geneva Water Works	0.12	0.00	0.12
Hartford	0.25	0.00	0.25
Slocumb Water Works	0.19	0.00	0.19

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Basin Number
03140301Basin Name
Upper Conecuh

Estimated Population

25,055

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	7.35	0.00	7.35
	100%	0%	
Irrigation	0.76	1.44	2.20
	35%	0%	
Livestock	0.25	0.35	0.60
	42%	58%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	1.74	1.74
	0%	100%	
Totals	8.36	3.53	11.89
	70%	30%	

Withdrawals by Public Supplier, in MGD

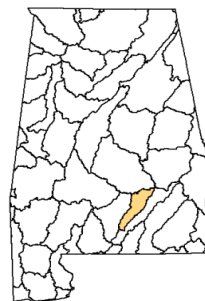
System Name	GW	SW	Total
Covington County Water			
Department	0.46	0.00	0.46
Goshen	0.03	0.00	0.03
Pike County Water Authority	0.60	0.00	0.60
South Bullock Water Authority	0.73	0.00	0.73
South Crenshaw County Water			
Authority	0.78	0.00	0.78
Town of Brantley	0.12	0.00	0.12
Town of Dozier	0.05	0.00	0.05
Town of River Falls	0.20	0.00	0.20
Troy Utility Department	1.19	0.00	1.19
Union Springs Utilities Board	1.04	0.00	1.04
Utility Board of the City of			
Andalusia	2.15	0.00	2.15

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Electric Power Generation,			
Transmission and Distribution	0.00	1.74	1.74

Basin Number
03140302

Basin Name
Patsaliga

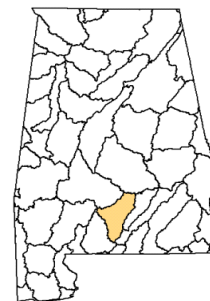


Estimated Population 14,571

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	1.37	0.00	1.37
	100%	0%	
Irrigation	0.28	0.34	0.62
	45%	0%	
Livestock	0.23	0.33	0.56
	41%	59%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	1.88	0.67	2.55
	74%	26%	

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Covington County Water Department	0.12	0.00	0.12
Luverne Water Works and Sewer Board	0.45	0.00	0.45
Pine Level Water	0.22	0.00	0.22
Quint-Mar Water Authority	0.38	0.00	0.38
Ramer Water Co., Inc.	0.07	0.00	0.07
Red Level	0.06	0.00	0.06
Rutledge	0.07	0.00	0.07

Basin Number
03140303Basin Name
Sepulga

Estimated Population

23,503

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	2.95	0.00	2.95
	100%	0%	
Irrigation	0.16	1.53	1.69
	9%	0%	
Livestock	0.18	0.28	0.46
	39%	61%	
Industrial	0.30	0.00	0.30
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	3.59	1.81	5.40
	66%	34%	

Withdrawals by Public Supplier, in MGD

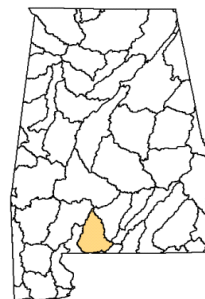
System Name	GW	SW	Total
Butler County Water Authority	1.07	0.00	1.07
Georgiana Water Works and Sewer Board	0.24	0.00	0.24
Greenville Water Works and Sewer Board	1.04	0.00	1.04
Owassa/Brownville Water and F. P. A. Inc.	0.25	0.00	0.25
The Water Works and Sewer Board of the Town of Fort Deposit	0.25	0.00	0.25
Town of McKenzie - Town Hall	0.10	0.00	0.10

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.30	0.00	0.30

Basin Number
03140304

Basin Name
Lower Conecuh



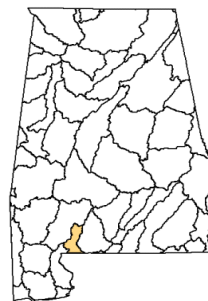
Estimated Population

27,156

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	3.78	0.00	3.78
	100%	0%	
Irrigation	0.67	0.48	1.15
	58%	0%	
Livestock	0.07	0.10	0.17
	41%	59%	
Industrial	1.40	33.66	35.06
	4%	96%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	5.92	34.24	40.16
	15%	85%	

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Brewton Water Works Board	1.49	0.00	1.49
Castleberry	0.08	0.00	0.08
City of Evergreen	1.13	0.00	1.13
East Brewton	0.28	0.00	0.28
Fairview Water System	0.07	0.00	0.07
Hamden Ridge P/A, Inc.	0.13	0.00	0.13
McCall Water System	0.37	0.00	0.37
Pollard	0.02	0.00	0.02
Ridge Road Water Authority	0.14	0.00	0.14
Riverview Water System	0.07	0.00	0.07

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.19	0.00	0.19
Converted Paper Product Manufacturing	0.12	33.66	33.78
Other Wood Product Manufacturing	0.00	0.00	0.00
Sawmills and Wood Preservation	1.09	0.00	1.09

Basin Number
03140305Basin Name
Escambia

Estimated Population

18,502

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	2.26	0.00	2.26
	100%	0%	
Irrigation	0.31	0.22	0.53
	58%	0%	
Livestock	0.02	0.03	0.05
	40%	60%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	2.59	0.25	2.84
	91%	9%	

Withdrawals by Public Supplier, in MGD

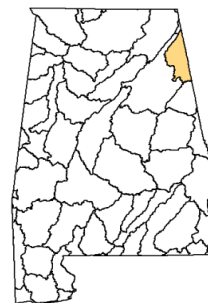
System Name	GW	SW	Total
Atmore Utility Board	1.00	0.00	1.00
Canoe Water and Fire Protection Authority	0.08	0.00	0.08
Excel	0.29	0.00	0.29
Flomaton	0.23	0.00	0.23
Freemanville Water System, Inc.	0.46	0.00	0.46
McCall Water System	0.17	0.00	0.17
Repton	0.03	0.00	0.03

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03150105

Basin Name
Upper Coosa



Estimated Population 43,691

Withdrawals, in Million Gallons per day (MGD) and percent (%)

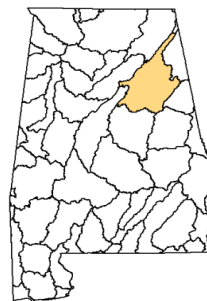
Category	GW	SW	Totals
Public Supply	2.54 56%	1.96 44%	4.50
Irrigation	0.08 2%	3.20 0%	3.28
Livestock	0.31 44%	0.40 56%	0.71
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	2.93 35%	5.56 65%	8.49

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Centre Water Works & Sewer Board	0.00	0.96	0.96
Cherokee County Water Authority	1.45	0.00	1.45
Northeast Alabama Water, Sewer & F.P.A.	1.09	0.00	1.09
Piedmont Water Works and Sewer Board	0.00	1.00	1.00

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03150106Basin Name
Middle Coosa

Estimated Population

341,077

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	38.56	30.89	69.45
	56%	44%	
Irrigation	0.59	17.48	18.07
	3%	0%	
Livestock	0.65	0.83	1.48
	44%	56%	
Industrial	1.73	38.33	40.06
	4%	96%	
Thermoelectric	0.00	114.66	114.66
	0%	100%	
Totals	41.53	202.19	243.72
	17%	83%	

Withdrawals by North American Industry Classification, in MGD

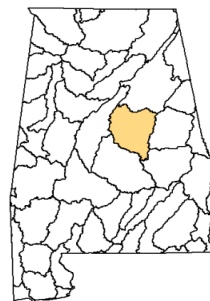
Industry Group	GW	SW	Total
Beverage Manufacturing	0.43	0.00	0.43
Cement and Concrete Product Manufacturing	0.00	4.45	4.45
Electric Power Generation, Transmission and Distribution	0.00	114.66	114.66
Foundries	0.07	0.00	0.07
Poultry and Egg Production	0.77	0.00	0.77
Pulp, Paper, and Paperboard Mills	0.46	24.67	25.13
Rubber Product Manufacturing	0.00	9.21	9.21

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Anniston Water Works and Sewer Board	13.42	0.15	13.57
Ashville Water and Sewer	0.23	0.31	0.54
Atalla Water	1.28	0.00	1.28
Big Wills Water	0.25	0.00	0.25
Calhoun County Water Authority	3.45	0.00	3.45
Childersburg Water, Sewer & Gas Board	0.28	0.00	0.28
City of Talladega Water and Sewer Department	2.69	0.99	3.68
Fort Payne Water Works Board	0.00	6.30	6.30
Gadsden Water Works & Sewer Board	0.00	15.68	15.68
Glencoe Water and Sewer Works	0.73	0.00	0.73
Hokes Bluff Water Board	0.86	0.00	0.86
Jacksonville Water Works & Sewer Board	0.00	1.31	1.31
Lincoln	2.10	0.00	2.10
Munford Water Authority, Inc.	0.15	0.00	0.15
New London Water Authority	0.63	0.00	0.63
Northeast Alabama Water, Sewer & F.P.A.	0.54	0.00	0.54
Oxford Water Works and Sewer Board	3.33	0.00	3.33
Pell City	2.33	0.00	2.33
Ragland Water Works Board	0.47	0.00	0.47
Southside Water Works & Sewer Board	0.80	0.00	0.80
Springville	0.48	0.00	0.48
Talladega County Water Dept.	0.00	0.82	0.82
Talladega/Shelby Water Treatment Plant	0.00	5.33	5.33
Town of Riverside	0.39	0.00	0.39
Odenville Utilities Board	2.39	0.00	2.39
Vincent Water Board	0.24	0.00	0.24
Waterworks, Inc	0.05	0.00	0.05
Wattsville Water Authority	0.6	0	0.6
Weaver	0.64	0	0.64
West Etowah County Water Authority	0.23	0	0.23

Basin Number
03150107

Basin Name
Lower Coosa

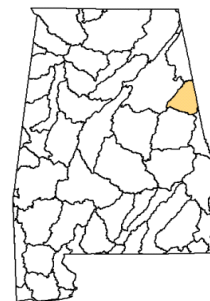


Estimated Population 153,230

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	6.31	9.66	15.97
	40%	60%	
Irrigation	1.13	3.31	4.44
	25%	0%	
Livestock	0.22	0.30	0.52
	42%	58%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	666.25	666.25
	0%	100%	
Totals	7.66	679.52	687.18
	1%	99%	

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	666.25	666.25

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Central Talladega County Water District	0.27	0.00	0.27
Childersburg Water, Sewer & Gas Board	1.09	0.00	1.09
Clanton Waterworks & Sewer Board	0.00	1.83	1.83
Columbiana Water Works Board	0.97	0.00	0.97
Five Star Water Supply	0.00	4.32	4.32
Harpersville Water Board	0.18	0.00	0.18
Shelby County Water Services	0.00	2.63	2.63
Stewartville Water	0.30	0.00	0.30
Sycamore Water and Sewer Authority	0.13	0.00	0.13
Thorsby	0.75	0.00	0.75
Utilities Board, City of Sylacauga	2.46	0.88	3.34
Wilsonville Waterworks - Town of Wilsonville	0.16	0.00	0.16

Basin Number
03150108Basin Name
Upper Tallopoosa

Estimated Population

23,758

Withdrawals, in Million Gallons per day (MGD) and percent (%)

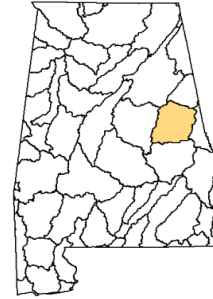
Category	GW	SW	Totals
Public Supply	0.00	1.02	1.02
	0%	100%	
Irrigation	0.46	0.31	0.77
	60%	0%	
Livestock	0.28	0.35	0.63
	44%	56%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	0.74	1.68	2.42
	31%	69%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Heflin Water Works	0.00	0.56	0.56
Wedowee Water, Sewer, & Gas Board	0.00	0.46	0.46

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03150109Basin Name
Middle Tallapoosa

Estimated Population

66,269

Withdrawals, in Million Gallons per day (MGD) and percent (%)

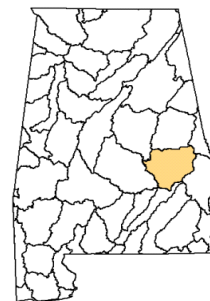
Category	GW	SW	Totals
Public Supply	0.00	17.10	17.10
	0%	100%	
Irrigation	0.30	0.89	1.19
	25%	0%	
Livestock	0.22	0.29	0.51
	43%	57%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	0.52	18.28	18.80
	3%	97%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Alexander City Water Department	0.00	8.53	8.53
Central Elmore Water & Sewer Authority	0.00	5.33	5.33
Clay County Water Authority	0.00	1.66	1.66
Lafayette	0.00	0.53	0.53
Roanoke Utilities Board	0.00	1.05	1.05

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03150110Basin Name
Lower Tallapoosa

Estimated Population

184,292

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	2.78	30.70	33.48
	8%	92%	
Irrigation	3.19	6.85	10.04
	32%	0%	
Livestock	0.16	0.24	0.40
	40%	60%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	6.13	37.79	43.92
	14%	86%	

Withdrawals by Public Supplier, in MGD

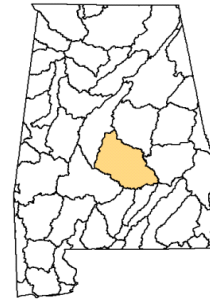
System Name	GW	SW	Total
Auburn Water Works Board	0.06	6.26	6.32
Beauregard Water Authority	1.04	0.00	1.04
Loachapoka Water Authority	0.42	0.00	0.42
Macon County Water Authority	0.49	0.00	0.49
Montgomery Water Works Sanitary			
Sewer Board	0.29	19.47	19.76
South Bullock Water Authority	0.09	0.00	0.09
Star Mindingall Water Authority	0.06	0.00	0.06
Tallassee	0.00	1.85	1.85
Tuskegee Utilities	0.00	3.12	3.12
Union Springs Utilities Board	0.33	0.00	0.33

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03150201

Basin Name
Upper Alabama



Estimated Population

325,522

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	31.34	0.00	31.34
	100%	0%	
Irrigation	4.22	6.22	10.44
	40%	0%	
Livestock	0.48	0.71	1.19
	40%	60%	
Industrial	2.53	63.33	65.86
	4%	96%	
Thermoelectric	0.00	5.83	5.83
	0%	100%	
Totals	38.57	76.09	114.66
	34%	66%	

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.00	5.83	5.83
National Security and International Affairs	0.04	0.01	0.05
Pulp, Paper, and Paperboard Mills	2.14	63.32	65.46
Sawmills and Wood Preservation	0.35	0.00	0.35

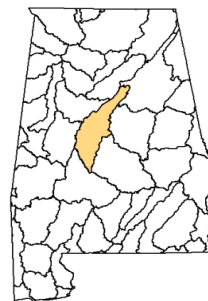
Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Autauga County Water	0.59	0.00	0.59
Autaugaville Water Works	0.15	0.00	0.15
Billingsley Water System	0.11	0.00	0.11
Chilton Water Authority	2.30	0.00	2.30
Dallas County Water & Sewer Authority	0.71	0.00	0.71
Elmore Water Authority	0.78	0.00	0.78
Hayneville	0.37	0.00	0.37
Holtville Water System, Inc.	0.10	0.00	0.10
Lowndes County Water Authority	0.38	0.00	0.38
Lowndesboro	0.09	0.00	0.09
Marbury Water System	0.66	0.00	0.66
Millbrook Utility System	0.15	0.00	0.15
Montgomery Water Works Sanitary Sewer Board	12.34	0.00	12.34
Mosses Water Authority	0.13	0.00	0.13
North Dallas Water Authority	0.53	0.00	0.53
Pilgrim Providence Water and F.P.A.	0.05	0.00	0.05
Pintlala	0.62	0.00	0.62
Prattville Water Works Board	4.79	0.00	4.79
Sellers Station Water System, Inc.	0.21	0.00	0.21
Selma Water Works	3.84	0.00	3.84
Snowdown Water System Inc.	0.28	0.00	0.28
South Dallas Water Authority	0.53	0.00	0.53
Tri-Community Water System	1.15	0.00	1.15
West Autauga Water Authority	0.32	0.00	0.32
White Hall	0.16	0.00	0.16

Basin Number
03150202Basin Name
Cahaba

Estimated Population

429,425

**Withdrawals, in Million Gallons per day (MGD) and percent (%)**

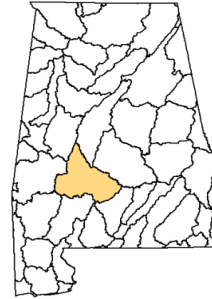
Category	GW	SW	Totals
Public Supply	27.51	52.39	79.90
	34%	66%	
Irrigation	0.65	5.95	6.60
	10%	0%	
Livestock	0.16	0.22	0.38
	42%	58%	
Industrial	0.16	0.00	0.16
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	28.48	58.56	87.04
	33%	67%	

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Cement and Concrete Product			
Manufacturing	0.16	0.00	0.16

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Alabaster Water Board	3.87	0.00	3.87
Birmingham WWB	0.00	52.39	52.39
Brent Utilities Board	1.14	0.00	1.14
Calera	1.81	0.00	1.81
Citizens' Water Service, Inc.	1.20	0.00	1.20
City of Centreville Water & Sewer Board	0.84	0.00	0.84
Green Pond Water System Inc	1.54	0.00	1.54
Helena Utility Board	1.29	0.00	1.29
Irondale Water System	1.18	0.00	1.18
Leeds	2.76	0.00	2.76
Montevallo Water Works & Sewer Board	1.11	0.00	1.11
Pelham Water Works	3.13	0.00	3.13
Perry County Water Authority	0.20	0.00	0.20
Trussville Utilities Board	4.68	0.00	4.68
Odenville Utilities Board	1.26	0.00	1.26
Warrior River Water Authority	0.42	0.00	0.42
West Blocton Water Works	0.58	0.00	0.58
Wilton Water Works	0.50	0.00	0.50

Basin Number
03150203Basin Name
Middle Alabama

Estimated Population

28,484

Withdrawals, in Million Gallons per day (MGD) and percent (%)

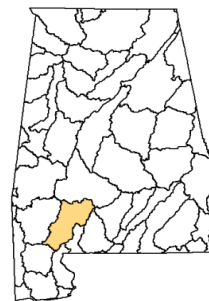
Category	GW	SW	Totals
Public Supply	2.89 100%	0.00 0%	2.89
Irrigation	0.44 15%	2.59 0%	3.03
Livestock	0.27 40%	0.41 60%	0.68
Industrial	0.00 0%	18.31 100%	18.31
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	3.60 14%	21.31 86%	24.91

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Camden	0.57	0.00	0.57
City of Marion	0.73	0.00	0.73
Millers Ferry Water Authority	0.07	0.00	0.07
Pine Apple Water Works	0.02	0.00	0.02
Town of Orrville	0.02	0.00	0.02
Town of Uniontown	0.77	0.00	0.77
West Dallas Water Authority	0.25	0.00	0.25
Wilcox County Water System	0.46	0.00	0.46

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	18.31	18.31

Basin Number
03150204Basin Name
Lower Alabama

Estimated Population

22,236

Withdrawals, in Million Gallons per day (MGD) and percent (%)

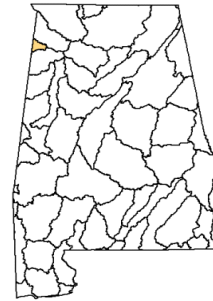
Category	GW	SW	Totals
Public Supply	2.41 100%	0.00 0%	2.41
Irrigation	3.20 83%	0.63 0%	3.83
Livestock	0.02 50%	0.02 50%	0.04
Industrial	0.13 0%	46.42 100%	46.55
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	5.76 11%	47.07 89%	52.83

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Beatrice Water System	0.11	0.00	0.11
Frisco City Water Works Board	0.32	0.00	0.32
Huxford Water and Fire Protection Authority	0.05	0.00	0.05
Monroeville Southwest Alabama Water Authority	1.24	0.00	1.24
Uriah Water System	0.45	0.00	0.45
	0.24	0.00	0.24

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Pulp, Paper, and Paperboard Mills	0.00	46.29	46.29
Veneer, Plywood, and Engineered Wood Product Manufacturing	0.13	0.13	0.26

Basin Number
03160101Basin Name
Upper Tombigbee

Estimated Population

2,345

Withdrawals, in Million Gallons per day (MGD) and percent (%)

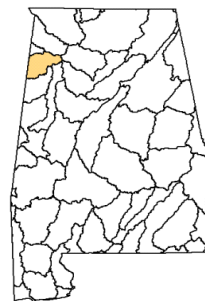
Category	GW	SW	Totals
Public Supply	0.00 0%	0.00 0%	0.00
Irrigation	0.01 20%	0.04 0%	0.05
Livestock	0.05 45%	0.06 55%	0.11
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	0.06 38%	0.10 63%	0.16

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
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Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03160103Basin Name
Buttahatchee

Estimated Population

24,665

Withdrawals, in Million Gallons per day (MGD) and percent (%)

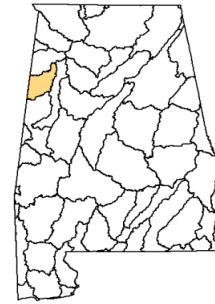
Category	GW	SW	Totals
Public Supply	0.59	1.96	2.55
	23%	77%	
Irrigation	0.10	0.14	0.24
	41%	0%	
Livestock	0.13	0.17	0.30
	43%	57%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	0.82	2.27	3.09
	27%	73%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Detroit Water Department	0.04	0.00	0.04
Guin Water Works and Sewer Board	0.00	0.70	0.70
Hamilton Waterworks & Sewer Board	0.00	1.26	1.26
Hodges Water Department	0.19	0.00	0.19
Sulligent	0.36	0.00	0.36

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03160105Basin Name
Luxapallila

Estimated Population

19,303

Withdrawals, in Million Gallons per day (MGD) and percent (%)

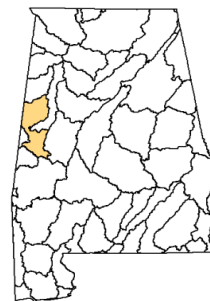
Category	GW	SW	Totals
Public Supply	1.59 46%	1.90 54%	3.49
Irrigation	0.02 8%	0.24 0%	0.26
Livestock	0.08 47%	0.09 53%	0.17
Industrial	0.11 100%	0.00 0%	0.11
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	1.80 45%	2.23 55%	4.03

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Fayette Water Board	0.00	1.46	1.46
Kennedy	0.16	0.00	0.16
Millport	0.18	0.00	0.18
Twin Water Authority	0.08	0.00	0.08
Vernon Water & Sewer	0.86	0.00	0.86
Winfield	0.31	0.44	0.75

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Sawmills and Wood Preservation	0.11	0.00	0.11

Basin Number
03160106Basin Name
**Middle Tombigbee
Lubbub**

Estimated Population

27,337

Withdrawals, in Million Gallons per day (MGD) and percent (%)

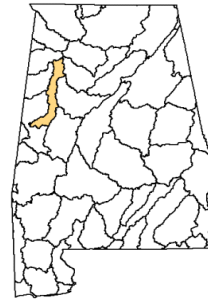
Category	GW	SW	Totals
Public Supply	3.96	0.00	3.96
	100%	0%	
Irrigation	0.16	0.67	0.83
	19%	0%	
Livestock	0.32	0.36	0.68
	47%	53%	
Industrial	0.01	0.00	0.01
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	4.45	1.03	5.48
	81%	19%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Aliceville Water and Sewer Board	0.91	0.00	0.91
Eutaw Water Department	0.22	0.00	0.22
Forkland Water	0.10	0.00	0.10
Gordo	0.35	0.00	0.35
Livingston Utility Board	0.94	0.00	0.94
Pickens County Water Authority	0.99	0.00	0.99
Reform	0.45	0.00	0.45

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Sawmills and Wood Preservation	0.01	0.00	0.01

Basin Number
03160107Basin Name
Sipsey

Estimated Population

17,293

Withdrawals, in Million Gallons per day (MGD) and percent (%)

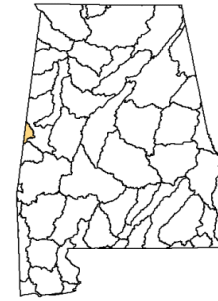
Category	GW	SW	Totals
Public Supply	0.67	0.00	0.67
	100%	0%	
Irrigation	0.22	0.68	0.90
	24%	0%	
Livestock	0.12	0.15	0.27
	44%	56%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	1.01	0.83	1.84
	55%	45%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Brilliant	0.12	0.00	0.12
Buhl, Elrod and Holman Water Authority	0.34	0.00	0.34
Eldridge Water Department	0.16	0.00	0.16
Glen Allen	0.05	0.00	0.05

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03160108Basin Name
Noxubee

Estimated Population

927

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	0.00 0%	0.00 0%	0.00
Irrigation	0.03 75%	0.01 0%	0.04
Livestock	0.02 40%	0.03 60%	0.05
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	0.05 56%	0.04 44%	0.09

Withdrawals by Public Supplier, in MGD

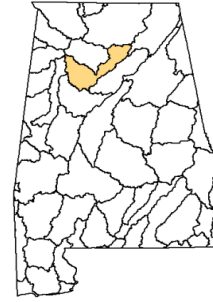
System Name	GW	SW	Total
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Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03160109

Basin Name
Mulberry Fork



Estimated Population

131,001

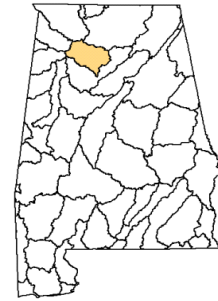
Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	0.77	48.91	49.68
	2%	98%	
Irrigation	0.55	0.77	1.32
	42%	0%	
Livestock	0.78	0.81	1.59
	49%	51%	
Industrial	0.43	1.84	2.27
	19%	81%	
Thermoelectric	0.00	922.15	922.15
	0%	100%	
Totals	2.53	974.48	977.01
	0%	100%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Birmingham WWB	0.00	24.41	24.41
Blount County Water Authority	0.24	1.11	1.35
Blountsville Utility Board	0.05	0.00	0.05
Cullman Utilities Board	0.00	12.21	12.21
Hanceville Water and Sewer Board	0.48	0.00	0.48
Jasper Waterworks and Sewer Board	0.00	11.18	11.18

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Animal Food Manufacturing	0.00	0.11	0.11
Animal Slaughtering and Processing	0.00	1.73	1.73
Electric Power Generation, Transmission and Distribution	0.00	922.15	922.15
Veneer, Plywood, and Engineered Wood Product Manufacturing	0.43	0.00	0.43

Basin Number
03160110Basin Name
Sipsey Fork

Estimated Population

52,288

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	0.00	19.33	19.33
	0%	100%	
Irrigation	0.29	0.92	1.21
	24%	0%	
Livestock	0.64	0.66	1.30
	49%	51%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	0.93	20.91	21.84
	4%	96%	

Withdrawals by Public Supplier, in MGD

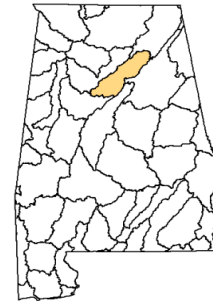
System Name	GW	SW	Total
Arley Water Works	0.00	0.97	0.97
Birmingham WWB	0.00	18.36	18.36

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03160111

Basin Name
Locust Fork



Estimated Population 318,634

Withdrawals, in Million Gallons per day (MGD) and percent (%)

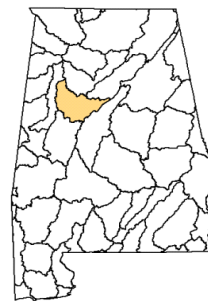
Category	GW	SW	Totals
Public Supply	2.67	51.05	53.72
	5%	95%	
Irrigation	0.32	2.31	2.63
	12%	0%	
Livestock	0.48	0.52	1.00
	48%	52%	
Industrial	0.34	0.00	0.34
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	3.81	53.88	57.69
	7%	93%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Allgood Water Works	0.00	0.07	0.07
Altoona Water & Sewer	0.15	0.00	0.15
Birmingham WWB	0.00	49.42	49.42
Blountsville Utility Board	0.53	0.00	0.53
Cleveland Water Works	0.32	0.00	0.32
Nectar Water Department	0.18	0.00	0.18
Oneonta Utilities Board	0.75	1.56	2.31
Snead	0.22	0.00	0.22
Walnut Grove	0.09	0.00	0.09
West Etowah County Water Authority	0.43	0.00	0.43

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Animal Slaughtering and Processing	0.00	0.00	0.00
Steel Product Manufacturing from Purchased Steel	0.34	0.00	0.34

Basin Number
03160112Basin Name
Upper Black Warrior

Estimated Population

280,592

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	0.61 1%	44.01 99%	44.62
Irrigation	0.64 15%	3.60 0%	4.24
Livestock	0.08 44%	0.10 56%	0.18
Industrial	0.20 100%	0.00 0%	0.20
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	1.53 3%	47.71 97%	49.24

Withdrawals by Public Supplier, in MGD

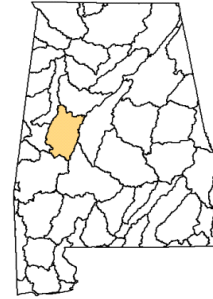
System Name	GW	SW	Total
Berry	0.00	0.53	0.53
City of Northport	0.00	3.64	3.64
Governmental Utility Services Corporation (Bessemer)	0.00	11.83	11.83
Tuscaloosa Water and Sewer Department	0.00	24.81	24.81
Warrior River Water Authority	0.61	3.20	3.81

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Petroleum and Coal Products			
Manufacturing	0.20	0.00	0.20

Basin Number
03160113

Basin Name
Lower Black Warrior



Estimated Population

108,271

Withdrawals, in Million Gallons per day (MGD) and percent (%)

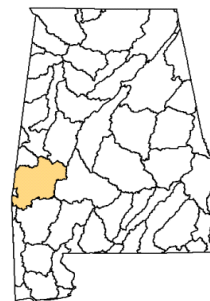
Category	GW	SW	Totals
Public Supply	4.17	0.00	4.17
	100%	0%	
Irrigation	0.46	1.22	1.68
	27%	0%	
Livestock	0.20	0.26	0.46
	43%	57%	
Industrial	0.59	1.04	1.63
	36%	64%	
Thermoelectric	0.00	354.71	354.71
	0%	100%	
Totals	5.42	357.23	362.65
	1%	99%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Coker Water Authority	0.36	0.00	0.36
Demopolis Water & Sewer Board	0.98	0.00	0.98
Eutaw Water Department	0.38	0.00	0.38
Fayetteville Water Authority	0.30	0.00	0.30
Fosters - Ralph Water Authority, Inc.	0.09	0.00	0.09
Greene County Sewer & Water	0.31	0.00	0.31
Greensboro Utilities Board	0.43	0.00	0.43
Hale County Water Authority	0.77	0.00	0.77
Moundville	0.51	0.00	0.51
Town of Faunsdale	0.04	0.00	0.04

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Electric Power Generation, Transmission and Distribution	0.03	354.71	354.74
Lumber and Other Construction Materials Merchant Wholesalers	0.02	0.00	0.02
Petroleum and Coal Products Manufacturing	0.54	0.86	1.40
Rubber Product Manufacturing	0.00	0.18	0.18

Basin Number
03160201Basin Name
**Middle Tombigbee
Chickasaw**

Estimated Population

33,848

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	3.74 100%	0.00 0%	3.74
Irrigation	0.17 23%	0.55 0%	0.72
Livestock	0.16 40%	0.24 60%	0.40
Industrial	0.20 0%	60.20 100%	60.40
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	4.27 7%	60.99 93%	65.26

Withdrawals by Public Supplier, in MGD

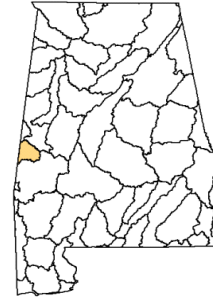
System Name	GW	SW	Total
Demopolis Water & Sewer Board	0.65	0.00	0.65
Gilbertown Utilities Board	0.49	0.00	0.49
Linden Utilities Board	0.30	0.00	0.30
Myrtlewood Water System	0.28	0.00	0.28
North Choctaw Water Authority	0.30	0.00	0.30
Sumter County Water Authority	0.90	0.00	0.90
Sweetwater	0.04	0.00	0.04
Thomaston Water & Gas Board	0.21	0.00	0.21
Town of Butler	0.36	0.00	0.36
Utilities Board - Town of Pennington	0.21	0.00	0.21

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.20	0.72	0.92
Pulp, Paper, and Paperboard Mills	0.00	59.48	59.48

Basin Number
03160202

Basin Name
Sucarnoochee



Estimated Population 6,596

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	0.06 100%	0.00 0%	0.06
Irrigation	0.08 34%	0.15 0%	0.23
Livestock	0.05 38%	0.08 62%	0.13
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	0.19 45%	0.23 55%	0.42

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
City of York	0.06	0.00	0.06

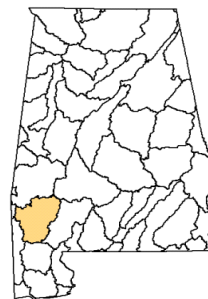
Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03160203Basin Name
Lower Tombigbee

Estimated Population

36,957

**Withdrawals, in Million Gallons per day (MGD) and percent (%)**

Category	GW	SW	Totals
Public Supply	4.11 60%	2.72 40%	6.83
Irrigation	0.28 88%	0.04 0%	0.32
Livestock	0.09 45%	0.11 55%	0.20
Industrial	7.08 22%	25.09 78%	32.17
Thermoelectric	0.00 0%	75.54 100%	75.54
Totals	11.56 10%	103.50 90%	115.06

Withdrawals by North American Industry Classification, in MGD

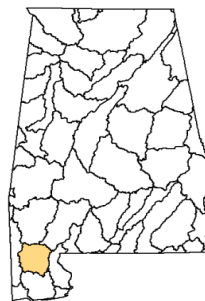
Industry Group	GW	SW	Total
Basic Chemical Manufacturing	4.30	0.00	4.30
Electric Power Generation, Transmission and Distribution	0.00	75.54	75.54
Iron and Steel Mills and Ferroalloy Manufacturing	0.92	0.00	0.92
Paint, Coating, and Adhesive Manufacturing	1.86	4.87	6.73
Pulp, Paper, and Paperboard Mills	0.00	20.22	20.22

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Chatom Utilities Board	0.24	0.00	0.24
Coffeeville Water Works	0.19	0.00	0.19
Frankville Water & Fire Protection Authority	0.10	0.00	0.10
Fulton Utilities Board	0.11	0.00	0.11
Grove Hill Water Works Board	0.76	0.00	0.76
Jackson Water and Sewer Board	0.77	0.90	1.67
Leroy Water Authority	0.23	0.00	0.23
McIntosh Water & Fire Protection Authority	0.44	0.00	0.44
Millry Water Works	0.23	0.00	0.23
Old Line Water Authority	0.31	0.00	0.31
Pine Hill	0.00	1.82	1.82
South Alabama Utilities	0.12	0.00	0.12
St. Stephens Water System	0.07	0.00	0.07
Wagarville Water Systems, Inc.	0.37	0.00	0.37
Washington County Water	0.17	0.00	0.17

Basin Number
03160204

Basin Name
Mobile Tensaw

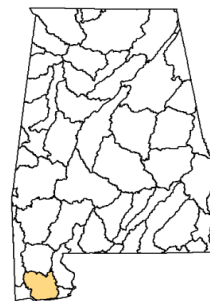


Estimated Population 187,430

Withdrawals, in Million Gallons per day (MGD) and percent (%)			
Category	GW	SW	Totals
Public Supply	10.38	0.00	10.38
	100%	0%	
Irrigation	11.47	2.78	14.25
	81%	0%	
Livestock	0.08	0.10	0.18
	44%	56%	
Industrial	4.96	0.70	5.66
	88%	12%	
Thermoelectric	0.00	989.29	989.29
	0%	100%	
Totals	26.89	992.87	1019.76
	3%	97%	

Withdrawals by Public Supplier, in MGD			
System Name	GW	SW	Total
Daphne Utilities Board	2.76	0.00	2.76
Kushla Water System	0.61	0.00	0.61
Le Moyne Water System, Inc.	0.46	0.00	0.46
MCB Water Authority, Inc.	0.17	0.00	0.17
Mount Vernon	0.26	0.00	0.26
North Baldwin Utilities	1.55	0.00	1.55
Saraland Water System	1.51	0.00	1.51
Satsuma	0.59	0.00	0.59
South Alabama Utilities	1.49	0.00	1.49
Spanish Fort Water System	0.39	0.00	0.39
St. Elmo - Irvington Water Authority	0.28	0.00	0.28
Turnerville Water & Fire Protection District	0.31	0.00	0.31

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total
Basic Chemical Manufacturing	1.03	0.00	1.03
Electric Power Generation, Transmission and Distribution	0.00	989.29	989.29
Fabric Mills	0.87	0.00	0.87
Iron and Steel Mills and Ferroalloy Manufacturing	0.11	0.70	0.81
Paint, Coating, and Adhesive Manufacturing	2.07	0.00	2.07
Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	0.51	0.00	0.51
Petroleum and Coal Products Manufacturing	0.37	0.00	0.37

Basin Number
03160205Basin Name
Mobile Bay

Estimated Population

257,063

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	13.31	0.00	13.31
	100%	0%	
Irrigation	12.38	5.15	17.53
	71%	0%	
Livestock	0.07	0.09	0.16
	44%	56%	
Industrial	1.02	0.00	1.02
	100%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	26.78	5.24	32.02
	84%	16%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Belforest Water System	0.58	0.00	0.58
Community Action Agency - Baldwin, Escambia, Clarke, Monroe, Conecuh	0.10	0.00	0.10
Daphne Utilities Board	0.46	0.00	0.46
Fairhope	4.13	0.00	4.13
Gulf Shores Utilities Board	1.67	0.00	1.67
Loxley	0.29	0.00	0.29
Mobile County	3.43	0.00	3.43
Orange Beach Water, Sewer & Fire Protection	0.62	0.00	0.62
Riviera Utilities	0.97	0.00	0.97
Robertsdale	0.51	0.00	0.51
Silverhill	0.13	0.00	0.13
St. Elmo - Irvington Water Authority	0.42	0.00	0.42

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	1.02	0.00	1.02
Other Wood Product Manufacturing	0.00	0.00	0.00

Basin Number
03170002

Basin Name
Upper Chickasawhay



Estimated Population

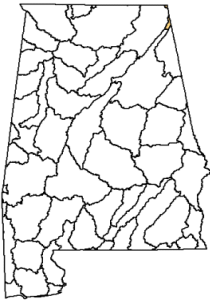
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Withdrawals, in Million Gallons per day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	0.00	0.00				
	0%	0%					
Irrigation	0.01	0.00	0.01				
	100%	0%					
Livestock	0.00	0.01	0.01				
	0%	100%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	0.01	0.01	0.02				
	50%	50%					

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Basin Number
03170003

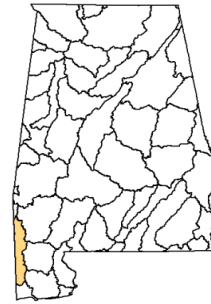
Basin Name
Lower Chickasawhay



Estimated Population 0

Withdrawals, in Million Gallons per day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	0.00	0.00				
	0%	0%					
Irrigation	0.00	0.00	0.00				
	0%	0%					
Livestock	0.00	0.00	0.00				
	0%	0%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	0.00	0.00	0.00				
	0%	0%					

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Basin Number
03170008Basin Name
Escatawpa

Estimated Population

77,148

Withdrawals, in Million Gallons per day (MGD) and percent (%)

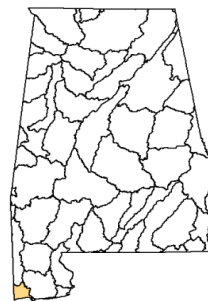
Category	GW	SW	Totals
Public Supply	5.11 7%	70.25 93%	75.36
Irrigation	2.53 81%	0.61 0%	3.14
Livestock	0.06 46%	0.07 54%	0.13
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	7.70 10%	70.93 90%	78.63

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Deer Park & Vinegar Blend Water & FPA	0.10	0.00	0.10
Grand Bay Water Works Board	0.96	0.00	0.96
Mobile Board of Water and Sewer Commissioners	0.00	70.25	70.25
South Alabama Utilities	3.81	0.00	3.81
St. Elmo - Irvington Water Authority	0.24	0.00	0.24

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
03170009Basin Name
Mississippi Coastal

Estimated Population

16,260

Withdrawals, in Million Gallons per day (MGD) and percent (%)

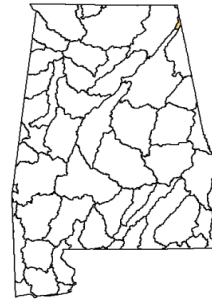
Category	GW	SW	Totals
Public Supply	1.18	0.00	1.18
	100%	0%	
Irrigation	1.38	0.36	1.74
	79%	0%	
Livestock	0.02	0.03	0.05
	40%	60%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	2.58	0.39	2.97
	87%	13%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Bayou La Batre Utilities Board	0.65	0.00	0.65
Dauphin Island Water and Sewer Authority	0.53	0.00	0.53

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Seafood Product Preparation and Packaging	0.00	0.00	0.00

Basin Number
06020001Basin Name
**Middle Tennessee
Chickamauga**

Estimated Population

2,743

Withdrawals, in Million Gallons per day (MGD) and percent (%)

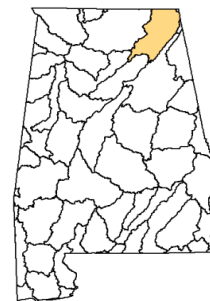
Category	GW	SW	Totals
Public Supply	0.23 100%	0.00 0%	0.23
Irrigation	0.03 27%	0.08 0%	0.11
Livestock	0.06 46%	0.07 54%	0.13
Industrial	0.00 0%	0.00 0%	0.00
Thermoelectric	0.00 0%	0.00 0%	0.00
Totals	0.32 68%	0.15 32%	0.47

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Valley Head Water	0.23	0.00	0.23

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
06030001Basin Name
Guntersville Lake

Estimated Population

147,721

Withdrawals, in Million Gallons per day (MGD) and percent (%)

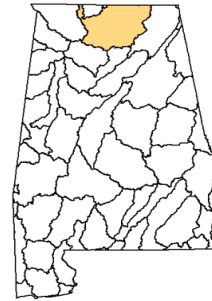
Category	GW	SW	Totals
Public Supply	5.06 13%	32.98 87%	38.04
Irrigation	0.60 20%	2.45 0%	3.05
Livestock	1.12 47%	1.24 53%	2.36
Industrial	0.38 4%	8.91 96%	9.29
Thermoelectric	0.00 0%	1044.42 100%	1044.42
Totals	7.16 1%	1090.00 99%	1097.16

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Animal Slaughtering and Processing	0.30	0.00	0.30
Electric Power Generation, Transmission and Distribution	0.00	1044.42	1044.42
Grain and Oilseed Milling	0.08	0.00	0.08
Pulp, Paper, and Paperboard Mills	0.00	8.91	8.91

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Albertville Municipal Utilities Board	0.00	12.38	12.38
Arab Water Works Board	0.59	4.30	4.89
Bridgeport Utilities Board	0.19	1.57	1.76
Crossville Water Board	0.04	0.00	0.04
Dekalb-Jackson Water Supply District	0.00	1.21	1.21
Douglas Water Authority	3.00	0.00	3.00
Guntersville Water Works and Sewer Board	0.76	2.74	3.50
North Marshall Utilities	0.00	1.41	1.41
Northeast Alabama Water, Sewer & F.P.A.	0.00	1.45	1.45
Pisgah	0.11	0.00	0.11
Scottsboro Water Board	0.00	4.41	4.41
Section & Dutton Water Boards	0.00	3.51	3.51
Stevenson Utilities Board	0.37	0.00	0.37

Basin Number
06030002Basin Name
Wheeler Lake

Estimated Population

569,928

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	31.93	78.62	110.55
	29%	71%	
Irrigation	5.12	9.62	14.74
	35%	0%	
Livestock	0.97	1.18	2.15
	45%	55%	
Industrial	0.00	138.86	138.86
	0%	100%	
Thermoelectric	0.00	2730.80	2730.80
	0%	100%	
Totals	38.02	2959.08	2997.10
	1%	99%	

Withdrawals by Public Supplier, in MGD

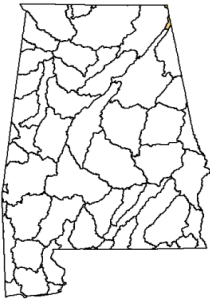
System Name	GW	SW	Total
Ardmore Water System	0.39	0.00	0.39
Decatur Utilities	0.00	33.38	33.38
Harvest-Monrovia Water Authority	5.22	0.00	5.22
Huntsville Utilities Water Department	7.52	38.08	45.60
Limestone County Water Authority	2.10	0.00	2.10
Madison County Water Department	8.77	0.00	8.77
Madison Water and Wastewater Board	6.19	0.00	6.19
Owens Cross Roads Water Authority	1.12	0.00	1.12
Redstone Arsenal	0.00	1.69	1.69
Rogersville Water & Sewer Board	0.58	0.00	0.58
Swan Creek Community	0.04	0.00	0.04
West Morgan East Lawrence Water & Sewer Authority	0.00	5.47	5.47

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Basic Chemical Manufacturing	0.00	73.67	73.67
Electric Power Generation, Transmission and Distribution	0.00	2730.80	2830.80
Other Nonmetallic Mineral Product Manufacturing	0.00	0.73	0.73
Plastics Product Manufacturing	0.00	4.35	4.35
Pulp, Paper, and Paperboard Mills	0.00	60.11	60.11

Basin Number
06030003

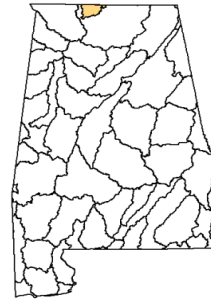
Basin Name
Upper Elk



Estimated Population 0

Withdrawals, in Million Gallons per day (MGD) and percent (%)				Withdrawals by Public Supplier, in MGD			
Category	GW	SW	Totals	System Name	GW	SW	Total
Public Supply	0.00	0.00	0.00				
	0%	0%					
Irrigation	0.00	0.00	0.00				
	0%	0%					
Livestock	0.00	0.00	0.00				
	0%	0%					
Industrial	0.00	0.00	0.00				
	0%	0%					
Thermoelectric	0.00	0.00	0.00				
	0%	0%					
Totals	0.00	0.00	0.00				
	0%	0%					

Withdrawals by North American Industry Classification, in MGD			
Industry Group	GW	SW	Total

Basin Number
06030004Basin Name
Lower Elk

Estimated Population

17,220

Withdrawals, in Million Gallons per day (MGD) and percent (%)

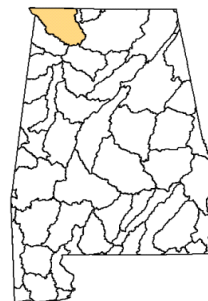
Category	GW	SW	Totals
Public Supply	0.00	8.12	8.12
	0%	100%	
Irrigation	0.51	1.47	1.98
	26%	0%	
Livestock	0.07	0.09	0.16
	44%	56%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	0.58	9.68	10.26
	6%	94%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Athens Utilities	0.00	5.16	5.16
Limestone County Water Authority	0.00	2.96	2.96

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Basin Number
06030005Basin Name
Pickwick Lake

Estimated Population

155,370

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	1.14 5%	21.34 95%	22.48
Irrigation	1.53 28%	4.00 0%	5.53
Livestock	0.42 42%	0.57 58%	0.99
Industrial	0.22 0%	69.54 100%	69.76
Thermoelectric	0.00 0%	1262.30 100%	1262.30
Totals	3.31 0%	1357.75 100%	1361.06

Withdrawals by Public Supplier, in MGD

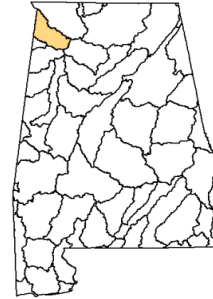
System Name	GW	SW	Total
Cherokee Waterworks and Gas Board	0.00	0.32	0.32
Colbert County Rural Water	0.00	0.70	0.70
Florence Water & Sewer Department	0.12	10.91	11.03
Greenhill Water System	0.45	0.00	0.45
Hawk Pride Mountain Water System	0.32	0.00	0.32
Leighton Water & Sewer Board	0.25	0.00	0.25
Moulton Water Works Board	0.00	2.21	2.21
Muscle Shoals Utilities Board	0.00	3.65	3.65
Sheffield Utilities	0.00	1.75	1.75
Tuscumbia - Water Department	0.00	1.80	1.80

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
Architectural and Structural Metals Manufacturing	0.22	2.19	2.41
Basic Chemical Manufacturing	0.00	26.30	26.30
Electric Power Generation, Transmission and Distribution	0.00	1262.30	1262.30
Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	0.00	35.45	35.45
Pulp, Paper, and Paperboard Mills	0.00	5.60	5.60

Basin Number
06030006

Basin Name
Bear



Estimated Population 34,137

Withdrawals, in Million Gallons per day (MGD) and percent (%)

Category	GW	SW	Totals
Public Supply	1.08	7.54	8.62
	13%	87%	
Irrigation	0.21	0.64	0.85
	25%	0%	
Livestock	0.32	0.42	0.74
	43%	57%	
Industrial	0.00	0.00	0.00
	0%	0%	
Thermoelectric	0.00	0.00	0.00
	0%	0%	
Totals	1.61	8.60	10.21
	16%	84%	

Withdrawals by Public Supplier, in MGD

System Name	GW	SW	Total
Franklin County Water Service Authority	0.00	1.19	1.19
Red Bay Water & Gas Board	0.80	0.00	0.80
Russellville Water & Sewer Board	0.28	3.49	3.77
Upper Bear Creek Water Treatment Plant	0.00	2.86	2.86

Withdrawals by North American Industry Classification, in MGD

Industry Group	GW	SW	Total
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Appendix C.

**Hydrologic Regions,
Subregions, and
Subbasins in
Alabama**

The Mobile and Tennessee Rivers are the major river systems in Alabama. Within Alabama, the Mobile River comprises 46 subbasins and 5 subregions while the Tennessee River comprises 7 subbasins and 2 subregions. The hydrographic classification scheme used for this report and in the following table (C1) is from the USDA, Soil Conservation Service publication, State of Alabama Hydrologic Unit Map with drainage areas by county and sub-watershed, March 1993; Federal standards for delineation of hydrologic unit boundaries; version 2.0, October 1, 2004; and, http://water.usgs.gov/GIS/huc_name.html#Region03 accessed November 26, 2008. Table C1 lists each hydrologic region with it's associated subregions and subbasins by 8-digit hydrologic unit code and name.

Table C-1. Eight-digit hydrologic unit codes and corresponding subbasin and subregion names, Alabama

SOUTH ATLANTIC-GULF REGION, MOBILE RIVER BASIN			
Subregion and eight -digit hydrologic unit code	Subbasin	Subregion and eight -digit hydrologic unit code	Subbasin
APPALACHICOLA		03150202	Cahaba
03130002	Middle Chattahoochee–Lake Harding	03150203	Middle Alabama
03130003	Middle Chattahoochee–W.F. George Reservoir	03150204	Lower Alabama
03130004	Lower Chattahoochee		
03130012	Chipola	MOBILE-TOMBIGBEE	
CHOCTAWHATCHEE-ESCAMBIA		03160101	Upper Tombigbee
03140103	Yellow	03160103	Buttahatchee
13140104	Blackwater	03160105	Luxapallila
03040106	Perdido	03160106	Middle Tombigbee–Lubbub
03140107	Perdido Bay	03160107	Sipsey
03140201	Upper Choctawhatchee	03160108	Noxubee
03140202	Pea	03160109	Mulberry Fork
03140203	Lower Choctawhatchee	03160110	Sipsey Fork
03140301	Upper Conecuh	03160111	Locust Fork
03140302	Patsaliga	03160112	Upper Black Warrior
03140303	Sepulga	03160113	Lower Black Warrior
03140304	Lower Conecuh	03160201	Middle Tombigbee–Chickasaw
03140305	Escambia	03160202	Sucarnoochee
ALABAMA		03160203	Lower Tombigbee
03150105	Upper Coosa	03160204	Mobile–Tensaw
03150106	Middle Coosa	03160205	Mobile Bay
03150107	Lower Coosa	PASCAGOULA	
03150108	Upper Tallapoosa	03170002	Upper Chickasawhay
03150109	Middle Tallapoosa	03170003	Lower Chickasawhay
03150110	Lower Tallapoosa	03170008	Escatawpa
03150201	Upper Alabama	03170009	Mississippi Coastal
TENNESSEE REGION, TENNESSEE RIVER BASIN			
MIDDLE TENNESSEE HIWASSEE			
6020001	Middle Tennessee–Chickamauga		
MIDDLE TENNESSEE-ELK			
06030001	Guntersville Lake		
06030002	Wheeler Lake		
06030003	Elk		
06030004	Lower Elk		
06030005	Pickwick Lake		
06030006	Bear		

Appendix D.**Public-Supplier
Survey Form**

Each of the public suppliers was surveyed to determine the amount of water delivered to residential, commercial, and industrial customers and public use and losses. The public suppliers surveyed either withdrew their own water from a groundwater or surface-water source, or purchased water, or relied on a combination of sources that could include groundwater, surface water, or purchased water. Public suppliers differ as to how water is accounted for within the system, and the questions in the survey (figure D1) cover the range of possible combinations of customer billing classes.



ALABAMA DEPARTMENT OF ECONOMIC & COMMUNITY AFFAIRS (ADECA)

OFFICE OF WATER RESOURCES

Alabama Public Water System Survey - 2010 Water Use Data

1. System Name: _____

OWR COU#: _____ ADEM PWSID#: _____

2. Water Use Reporting Period: Calendar Year January 2010 – December 2010

3. Water Volume Units Reported (For Information Requested Below)

Circle one: gallons thousand gallons million gallons

a. Total amount of water sold to other public water-supply systems _____

Number of public water-supply systems to which water was sold _____

b. Total amount of water sold to residential customers _____

Number of billed residential accounts for period of record _____

c. Total amount of water sold to commercial customers _____

Number of billed commercial accounts for period of record _____

d. Total amount of water sold to industrial customers _____

Number of billed industrial accounts for period of record _____

e. Total amount of water used for purposes such as firefighting, line flushing, _____

maintenance, and other public uses or losses _____

Or, percentage of water for other purposes such as firefighting, etc. _____

f. Total amount of water distributed. (Total of a+b+c+d+e) _____

NOTE: If you do not separate residential, commercial and industrial customers, report them all under b, residential customers.

FACILITY/CONTACT INFORMATION

Indicate the person to contact for further information (e.g., system manager, operator, billing manager, etc.):

Name: _____ Title: _____

Phone: _____ Fax: _____

E-mail: _____ Date: _____

Please return the Survey Form back to OWR by March 31, 2011 with your 2010 Water Use Reporting Forms.
For questions see the contact information below.

Phone: 334-242-5499

Fax: 334-242-0776

E-mail: water@adeca.alabama.gov

Physical Address:

401 Adams Avenue, Suite 434

Montgomery AL 36104

Mailing Address

P.O. Box 5690

Montgomery, AL 36109-5690

Figure D–1. Alabama Office of Water Resources, 2010 Alabama Water System Survey Form

Appendix E.

Hydroelectric Dams

Table E1 provides the name, county and community location, year completed, generating capacity in kilowatt-hours, reservoir surface area, and length of shoreline for each hydroelectric power plant.

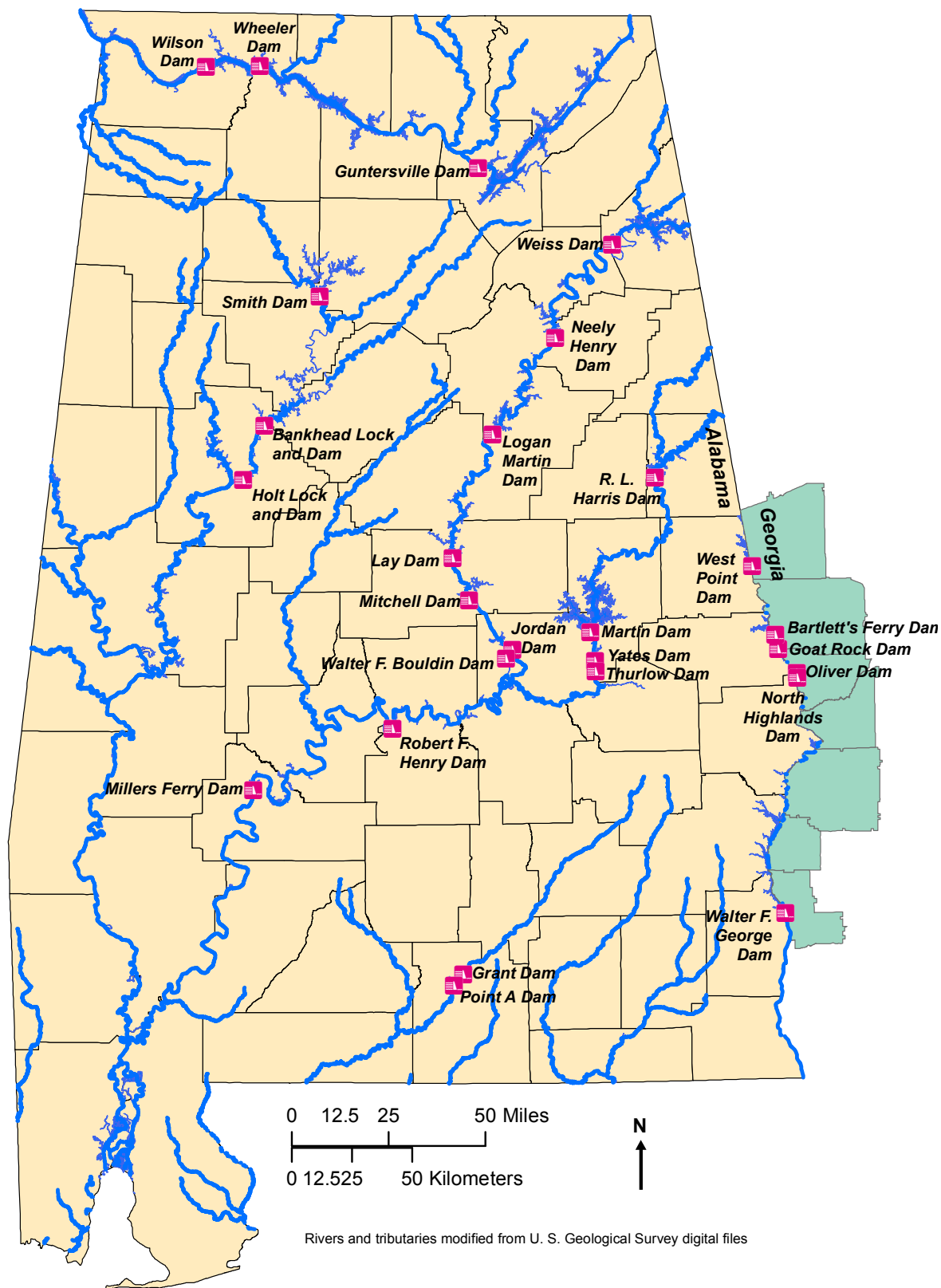
Figure E1 is a map of Alabama showing the locations of the hydroelectric dams and the major river systems in Alabama. Alabama Power Company, PowerSouth Energy Cooperative, TVA, and USACE manage 21 hydroelectric dams on the Tennessee, Black Warrior, Coosa, Tallapoosa, Alabama, and Conecuh Rivers. Georgia Power Company and USACE manage six hydroelectric dams on the Chattahoochee River separating Alabama and Georgia.

Table E-1. Hydroelectric dams in Alabama, 2010

[Location indicates the nearest city to the dam, not necessarily the location of the dam or the business offices; kWh, kilowatt-hour; AL, Alabama; TVA, Tennessee Valley Authority; APCO, Alabama Power Company; USACE, U.S. Army Corps of Engineers; GA, Georgia; GPC, Georgia Power Company; PSEC, PowerSouth Energy Cooperative.]

Hydroelectric dam	County	Location	Year Completed	Generating Capacity (kWh)	Area (surface acres)	Length of Shoreline (miles)	Operator
TENNESSEE RIVER							
Guntersville Dam	Marshall	Guntersville, AL	1939	140,400	67,900	890	TVA
Wheeler Dam	Lauderdale	Decatur, AL	1936	411,800	67,070	1,027	TVA
Wilson Dam	Lauderdale	Florence, AL	1924	675,400	15,500	166	TVA
BLACK WARRIOR RIVER							
Smith Dam	Walker, Cullman	Jasper, AL	1961	157,500	21,200	500	APCO
Bankhead Lock and Dam	Tuscaloosa	Northport, AL	1963	53,985	9,200	400	APCO
Holt Lock and Dam	Tuscaloosa	Northport, AL	1968	49,000	3,296	45	APCO
COOSA RIVER							
Weiss Dam	Cherokee	Leesburg, AL	1961	87,750	30,200	447	APCO
Neely Henry Dam	Calhoun, St. Clair	Ohatchee, AL	1966	72,900	11,200	339	APCO
Logan Martin Dam	St. Clair, Talladega	Vincent, AL	1964	128,250	15,263	275	APCO
Lay Dam	Chilton, Coosa	Clanton, AL	1914	177,000	12,000	289	APCO
Mitchell Dam	Chilton, Coosa	Verbena, AL	1923	170,000	5,850	147	APCO
Jordan Dam	Elmore	Wetumpka, AL	1928	100,000	6,800	118	APCO
Walter Bouldin Dam	Elmore	Wetumpka, AL	1967	225,000	6,800	118	APCO
TALLAPOOSA RIVER							
R.L. Harris Dam	Randolph	Wedowee, AL	1983	135,000	10,660	271	APCO
Martin Dam	Elmore, Tallapoosa	Dadeville, AL	1926	154,200	40,000	700	APCO
Yates Dam	Elmore, Tallapoosa	Tallassee, AL	1928	45,500	2,000	40	APCO
Thurlow Dam	Elmore, Tallapoosa	Tallassee, AL	1930	85,000	574	6	APCO
ALABAMA RIVER							
Robert F. Henry Dam	Autauga, Lowndes	Benton, AL	1972	72,000	12,800	368	USACE
Millers Ferry Dam	Wilcox	Millers Ferry, AL	1970	90,000	17,280	500	USACE
CHATTAHOOCHEE RIVER							
West Point Dam	Troup GA / Chambers AL	West Point, GA	1975	82,200	25,900	525	USACE
Goat Rock Dam	Harris GA / Lee AL	Phenix City, AL	1915	38,600	940	25	GPC
Bartlett's Ferry Dam	Harris GA / Lee AL	Phenix City, AL	1926	173,000	5,850	156	GPC
Oliver Dam	Muscogee GA / Lee AL	Columbus, GA	1959	60,000	2,150	40	GPC
North Highlands Dam	Muscogee GA / Lee AL	Columbus, GA	1903	29,600	131	3	GPC
Walter F. George Dam	Clay GA / Henry AL	Eufaula, AL	1963	160,000	45,180	640	USACE
CONECUH RIVER							
Gantt Dam	Covington	Andalusia, AL	1920	5,200	2,700	21	PSEC
Point A Dam	Covington	Andalusia, AL	1920	3,200	600	15	PSEC

Figure E-1. Hydroelectric dams in Alabama, 2010



For further information, contact:



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